EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	2	("5543511").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/11/30 10:35
L2	3513	(polysaccharide or carbohydrate) same hydroly$5 same (carbon dioxide)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/11/30 10:44
L3	1015	(polysaccharide or carbohydrate) with hydroly$5 with(carbon dioxide)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/11/30 10:46
L4	36	(polysaccharide or carbohydrate) with hydroly$5 with "carbon dioxide"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/11/30 10:55
L5	320	(polysaccharide or carbohydrate) same hydroly$5 same "carbon dioxide"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/11/30 10:49
L6	284	l5 not l4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/11/30 10:49
L7	83	(polysaccharide or carbohydrate or sugar) with hydroly$5 with "carbon dioxide"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/11/30 10:55

EAST Search History

L8	47	l7 not l4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/11/30 10:57
L16	1891	536/124.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/11/30 10:59
L17	153	l16 and "carbon dioxide"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/11/30 12:03
L18	2	"4174976".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/11/30 12:03

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 NEWS  1          Web Page for STN Seminar Schedule - N. America
 NEWS  2  JUL 02  LMEDLINE coverage updated
 NEWS  3  JUL 02  SCISEARCH enhanced with complete author names
 NEWS  4  JUL 02  CHEMCATS accession numbers revised
 NEWS  5  JUL 02  CA/CAplus enhanced with utility model patents from China
 NEWS  6  JUL 16  CAplus enhanced with French and German abstracts
 NEWS  7  JUL 18  CA/CAplus patent coverage enhanced
 NEWS  8  JUL 26  USPATFULL/USPAT2 enhanced with IPC reclassification
 NEWS  9  JUL 30  USGENE now available on STN
 NEWS 10  AUG 06  CAS REGISTRY enhanced with new experimental property tags
 NEWS 11  AUG 06  FSTA enhanced with new thesaurus edition
 NEWS 12  AUG 13  CA/CAplus enhanced with additional kind codes for granted
                  patents
 NEWS 13  AUG 20  CA/CAplus enhanced with CAS indexing in pre-1907 records
 NEWS 14  AUG 27  Full-text patent databases enhanced with predefined
                  patent family display formats from INPADOCDB
 NEWS 15  AUG 27  USPATOLD now available on STN
 NEWS 16  AUG 28  CAS REGISTRY enhanced with additional experimental
                  spectral property data
 NEWS 17  SEP 07  STN AnaVist, Version 2.0, now available with Derwent
                  World Patents Index
 NEWS 18  SEP 13  FORIS renamed to SOFIS
 NEWS 19  SEP 13  INPADOCDB enhanced with monthly SDI frequency
 NEWS 20  SEP 17  CA/CAplus enhanced with printed CA page images from
                  1967-1998
 NEWS 21  SEP 17  CAplus coverage extended to include traditional medicine
                  patents
 NEWS 22  SEP 24  EMBASE, EMBAL, and LEMBASE reloaded with enhancements
 NEWS 23  OCT 02  CA/CAplus enhanced with pre-1907 records from Chemisches
                  Zentralblatt
 NEWS 24  OCT 19  BEILSTEIN updated with new compounds
 NEWS 25  NOV 15  Derwent Indian patent publication number format enhanced
 NEWS 26  NOV 19  WPIX enhanced with XML display format
 NEWS 27  NOV 30  ICSD reloaded with enhancements

 NEWS EXPRESS  19 SEPTEMBER 2007:  CURRENT WINDOWS VERSION IS V8.2,
               CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
               AND CURRENT DISCOVER FILE IS DATED 19 SEPTEMBER 2007.

 NEWS HOURS    STN Operating Hours Plus Help Desk Availability
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NEWS IPC8     For general information regarding STN implementation of IPC 8

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FILE LAST UPDATED: 29 Nov 2007  (20071129/ED)

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E1             1      FUNAZU YUKIO/AU
E2             1      FUNAZU YUZO/AU
E3            19 -->  FUNAZUKURI T/AU
E4            72      FUNAZUKURI TOSHITAKA/AU
E5             1      FUNAZUKURI TOSHITAKE/AU
E6             2      FUNAZUKURI YOSHIKAZU/AU
E7             1      FUNAZUMI YOSHIMOTO/AU
E8             1      FUNBASHI MASAYUKI/AU
E9             6      FUNBERG E I/AU
E10            1      FUNBERG ELENA I/AU
E11            1      FUNC F/AU
E12            1      FUNCASTA C G/AU
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             19 "FUNAZUKURI T"/AU
             72 "FUNAZUKURI TOSHITAKA"/AU
              1 "FUNAZUKURI TOSHITAKE"/AU
L1           92 ("FUNAZUKURI T"/AU OR "FUNAZUKURI TOSHITAKA"/AU OR "FUNAZUKURI
                TOSHITAKE"/AU)

=> e miyazawa t/au
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E3          160 --> MIYAZAWA T/AU
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E7            8     MIYAZAWA TAKAAKI/AU
E8           11     MIYAZAWA TAKAHIKO/AU
E9            6     MIYAZAWA TAKAHIRO/AU
E10          17     MIYAZAWA TAKAHITO/AU
E11           1     MIYAZAWA TAKAHUMI/AU
E12           2     MIYAZAWA TAKAMARO/AU

=> e
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E14          18     MIYAZAWA TAKAO/AU
E15         180     MIYAZAWA TAKASHI/AU
E16          16     MIYAZAWA TAKATOSHI/AU
E17          89     MIYAZAWA TAKAYUKI/AU
E18           5     MIYAZAWA TAKENORI/AU
E19          75     MIYAZAWA TAKEO/AU
E20          83     MIYAZAWA TAKESHI/AU
E21          47     MIYAZAWA TAKESHIGE/AU
E22           2     MIYAZAWA TAKETSUNE/AU
E23           1     MIYAZAWA TAKEYOSHI/AU
E24           1     MIYAZAWA TAKSHI/AU

=> e miyazawa tetsuya/au
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E2           33     MIYAZAWA TETSUO/AU
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E4           12     MIYAZAWA TOHRU/AU
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E12           2     MIYAZAWA TOMOHARU/AU

=> s e3
L2            6 "MIYAZAWA TETSUYA"/AU

=> d his

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                E FUNAZUKURI T/AU
L1           92 S E3-E5
                E MIYAZAWA T/AU
                E MIYAZAWA TETSUYA/AU
L2            6 S E3

=> dup remove l1 l2
PROCESSING COMPLETED FOR L1
PROCESSING COMPLETED FOR L2
L3           93 DUP REMOVE L1 L2 (5 DUPLICATES REMOVED)

=> l3 and "carbon dioxide"
L4          92 S L3
L5           1 S L3
       1324464 "CARBON"
         28197 "CARBONS"
       1334462 "CARBON"
                 ("CARBON" OR "CARBONS")
        509256 "DIOXIDE"
          6821 "DIOXIDES"
        510986 "DIOXIDE"
                 ("DIOXIDE" OR "DIOXIDES")
        242838 "CARBON DIOXIDE"
                 ("CARBON"(W)"DIOXIDE")
L6          42 (L4 OR L5) AND "CARBON DIOXIDE"

=> l6 and hydroly?
        628350 HYDROLY?
L7           3 L6 AND HYDROLY?

=> d l7 1-3 ibib abs

L7   ANSWER 1 OF 3  CAPLUS  COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER:         2006:221593  CAPLUS
DOCUMENT NUMBER:          144:473756
TITLE:                    Decomposition of acetamide and formamide in
                          pressurized hot water
AUTHOR(S):                Okazaki, M.; Funazukuri, T.
CORPORATE SOURCE:         Department of Applied Chemistry, Chuo University,
                          1-13-27 Kasuga, Bunkyo-ku, Tokyo, 112-8551, Japan
SOURCE:                   Journal of Materials Science (2006), 41(5), 1517-1521
                          CODEN: JMTSAS; ISSN: 0022-2461
PUBLISHER:                Springer
DOCUMENT TYPE:            Journal
LANGUAGE:                 English
AB   Acetamide and formamide were individually decomposed in pressurized hot
     water in a tubular flow reactor at temps. from 573 K to 693 K and pressure
     of 23 MPa, residence times up to 500 s, and initial concns. of both amides
     of 0.005 to 0.5 mol/L.  The major products were ammonia and acetic acid
     from decomposition of acetamide, and ammonia and formic acid from that of
     formamide.  Formic acid was further decomposed readily into carbon
     dioxide.  Although the decomposition reactions for both amides were
     represented acceptably by first-order reaction kinetics, the rate consts.
     increased with increasing initial sample concns. due to the autocatalytic
     effect.  Apparently, second-order reaction kinetics with respect to the
     concentration of each amide remaining better represented the global
decomposition
```

rates, and the rate consts. decreased with increasing initial concns. The effects of added hydrogen peroxide on the global decomposition rates and the product yields were not evident: the addition slightly lowered the rates, but the major products were almost the same as those in the absence of hydrogen peroxide at temps. lower than 653 K. Above 653 K more CO2 was produced.

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2005:1071119 CAPLUS
DOCUMENT NUMBER: 144:24131
TITLE: Polysaccharide **Hydrolysis** Accelerated by Adding **Carbon Dioxide** under Hydrothermal Conditions
AUTHOR(S): Miyazawa, Tetsuya; **Funazukuri, Toshitaka**
CORPORATE SOURCE: Department of Applied Chemistry, Chuo University, Tokyo, 112-8551, Japan
SOURCE: Biotechnology Progress (2005), 21(6), 1782-1785
CODEN: BIPRET; ISSN: 8756-7938
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Polysaccharides such as agar, guar gum, starch, and xylan were **hydrolyzed** to produce mono- and oligosaccharides under hydrothermal conditions with and without **carbon dioxide** in a small batch reactor. The mol. weight distributions of the polysaccharide **hydrolyzates** shifted to lower mol. wts. by increasing the **carbon dioxide** load, corresponding to higher pressures of **carbon dioxide.** For example, the yield of glucose produced from the **hydrolysis** of starch at 200 °C was increased significantly from 3.7% to 53.0% (on a carbon weight basis) of the initial polysaccharide by increasing **carbon dioxide** load in a reaction time of 15 min. Carbonic acid generated from water and **carbon dioxide** appeared to lower the pH of high-temperature and high-pressure water. Polysaccharide **hydrolysis** under hydrothermal conditions in the presence of **carbon dioxide** is an environmentally benign method to produce mono- and oligosaccharides because the process does not require the use of conventional acids and bases followed by neutralization and separation

REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2005:472357 CAPLUS
DOCUMENT NUMBER: 143:9410
TITLE: Method of **hydrolyzing** organic compound
INVENTOR(S): **Funazukuri, Toshitaka**; Miyazawa, Tetsuya
PATENT ASSIGNEE(S): Tama-TLO Corporation, Japan
SOURCE: PCT Int. Appl., 22 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

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     PATENT NO.          KIND    DATE        APPLICATION NO.         DATE
     ---------------     ----    --------    --------------------    --------
     WO 2005049869        A1     20050602    WO 2004-JP17638         20041119
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
             CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
             GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
             LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,
             NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,
             TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
         RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,
             AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,
             EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO,
             SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR,
             NE, SN, TD, TG
     EP 1686192           A1     20060802    EP 2004-799840          20041119
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, IS
     CN 1906310           A      20070131    CN 2004-80040661        20041119
     US 2007267008        A1     20071122    US 2007-579741          20070323
PRIORITY APPLN. INFO.:                       JP 2003-393118       A  20031121
                                             WO 2004-JP17638      W  20041119
AB   The hydrolysis of an organic compound (especially, polysaccharide such as
     starch, agar, guar gum or cellulose) is done by using hot water at 5-100
     MPa and 140-300° under pressurized solubilized CO2.
REFERENCE COUNT:          7      THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS
                                 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT


=> e bergfeld manfred/au
E1             4      BERGFELD LUDWIG/AU
E2             2      BERGFELD M/AU
E3            69 --> BERGFELD MANFRED/AU
E4             1      BERGFELD MANFRED ING GRAD/AU
E5             2      BERGFELD MANFRED J/AU
E6             9      BERGFELD MANFRED JOSEF/AU
E7             2      BERGFELD MICHELE/AU
E8             5      BERGFELD MICHELE A/AU
E9             2      BERGFELD MICHELLE/AU
E10            1      BERGFELD MICHELLE A/AU
E11            1      BERGFELD P/AU
E12            1      BERGFELD PAUL/AU

=> s e2-e6
               2 "BERGFELD M"/AU
              69 "BERGFELD MANFRED"/AU
               1 "BERGFELD MANFRED ING GRAD"/AU
               2 "BERGFELD MANFRED J"/AU
               9 "BERGFELD MANFRED JOSEF"/AU
L8            83 ("BERGFELD M"/AU OR "BERGFELD MANFRED"/AU OR "BERGFELD MANFRED
                 ING GRAD"/AU OR "BERGFELD MANFRED J"/AU OR "BERGFELD MANFRED
                JOSEF"/AU)

=> s l8 and "carbon dioxide"
         1324464 "CARBON"
           28197 "CARBONS"
         1334462 "CARBON"
                   ("CARBON" OR "CARBONS")
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        509256 "DIOXIDE"
          6821 "DIOXIDES"
        510986 "DIOXIDE"
                 ("DIOXIDE" OR "DIOXIDES")
        242838 "CARBON DIOXIDE"
                 ("CARBON"(W)"DIOXIDE")
L9            2 L8 AND "CARBON DIOXIDE"

=> d l9 1-2
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L9   ANSWER 1 OF 2  CAPLUS  COPYRIGHT 2007 ACS on STN
AN   1998:13679  CAPLUS
DN   128:89085
TI   Preparation of betaine carbonic esters from alkylene oxides and
     carbon dioxide
IN   Ihrig, Klaus; Bergfeld, Manfred
PA   Akzo Nobel N.V., Neth.
SO   Eur. Pat. Appl., 10 pp.
     CODEN: EPXXDW
DT   Patent
LA   German
FAN.CNT 1
     PATENT NO.          KIND   DATE        APPLICATION NO.        DATE
     ---------------     ----   --------    --------------------   --------
PI   EP 812821            A1    19971217    EP 1997-109372         19970610
     EP 812821            B1    20001129
         R:  BE, CH, DE, ES, FR, GB, IT, LI, NL, SE
     ES 2153622           T3    20010301    ES 1997-109372         19970610
PRAI DE 1996-19623324     A     19960612
OS   CASREACT 128:89085
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L9   ANSWER 2 OF 2  CAPLUS  COPYRIGHT 2007 ACS on STN
AN   1995:886074  CAPLUS
DN   123:260169
TI   Preparation of level degree of polymerization cellulose
IN   Bergfeld, Manfred Josef; Seifert, Juergen
PA   Akzo Nobel N.V., Neth.
SO   Eur. Pat. Appl., 10 pp.
     CODEN: EPXXDW
DT   Patent
LA   German
FAN.CNT 1
     PATENT NO.          KIND   DATE        APPLICATION NO.        DATE
     ---------------     ----   --------    --------------------   --------
PI   EP 657472            A1    19950614    EP 1994-119200         19941206
         R:  AT, BE, DE, ES, FR, GB, IE, IT, NL, SE
     DE 4342442           A1    19950614    DE 1993-4342442        19931213
     DE 4342442           C2    19961121
     CA 2137890           A1    19950614    CA 1994-2137890        19941212
     JP 07206901          A     19950808    JP 1994-308014         19941212
     US 5543511           A     19960806    US 1994-354788         19941212
     FI 9405856           A     19950614    FI 1994-5856           19941213
     FI 107929            B1    20011031
     BR 9404978           A     19950808    BR 1994-4978           19941213
PRAI DE 1993-4342442      A     19931213
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=> d his

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                E FUNAZUKURI T/AU
L1           92 S E3-E5
                E MIYAZAWA T/AU
                E MIYAZAWA TETSUYA/AU
L2            6 S E3
L3           93 DUP REMOVE L1 L2 (5 DUPLICATES REMOVED)
L4           92 S L3
L5            1 S L3
L6           42 L3 AND "CARBON DIOXIDE"
L7            3 L6 AND HYDROLY?
                E BERGFELD MANFRED/AU
L8           83 S E2-E6
L9            2 S L8 AND "CARBON DIOXIDE"

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 NEWS  3  JUL 02  SCISEARCH enhanced with complete author names
 NEWS  4  JUL 02  CHEMCATS accession numbers revised
 NEWS  5  JUL 02  CA/CAplus enhanced with utility model patents from China
 NEWS  6  JUL 16  CAplus enhanced with French and German abstracts
 NEWS  7  JUL 18  CA/CAplus patent coverage enhanced
 NEWS  8  JUL 26  USPATFULL/USPAT2 enhanced with IPC reclassification
 NEWS  9  JUL 30  USGENE now available on STN
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 NEWS 12  AUG 13  CA/CAplus enhanced with additional kind codes for granted
                  patents
 NEWS 13  AUG 20  CA/CAplus enhanced with CAS indexing in pre-1907 records
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 NEWS 15  AUG 27  USPATOLD now available on STN
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                  spectral property data
 NEWS 17  SEP 07  STN AnaVist, Version 2.0, now available with Derwent
                  World Patents Index
 NEWS 18  SEP 13  FORIS renamed to SOFIS
 NEWS 19  SEP 13  INPADOCDB enhanced with monthly SDI frequency
 NEWS 20  SEP 17  CA/CAplus enhanced with printed CA page images from
                  1967-1998
 NEWS 21  SEP 17  CAplus coverage extended to include traditional medicine
                  patents
 NEWS 22  SEP 24  EMBASE, EMBAL, and LEMBASE reloaded with enhancements
 NEWS 23  OCT 02  CA/CAplus enhanced with pre-1907 records from Chemisches
                  Zentralblatt
 NEWS 24  OCT 19  BEILSTEIN updated with new compounds
 NEWS 25  NOV 15  Derwent Indian patent publication number format enhanced
 NEWS 26  NOV 19  WPIX enhanced with XML display format
 NEWS 27  NOV 30  ICSD reloaded with enhancements

 NEWS EXPRESS  19 SEPTEMBER 2007:  CURRENT WINDOWS VERSION IS V8.2,
               CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
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                                                          ENTRY    SESSION
FULL ESTIMATED COST                                        0.21       0.21

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http://www.cas.org/infopolicy.html

=> (carbohydrate or polysaccharide or sugar) and hydroly? and "carbon dioxide"
        133551 CARBOHYDRATE
        155123 CARBOHYDRATES
        224818 CARBOHYDRATE
                 (CARBOHYDRATE OR CARBOHYDRATES)
         63204 POLYSACCHARIDE
         79902 POLYSACCHARIDES
        100533 POLYSACCHARIDE
                 (POLYSACCHARIDE OR POLYSACCHARIDES)
        269328 SUGAR
        132355 SUGARS
        341069 SUGAR
                 (SUGAR OR SUGARS)
```

```
        628350 HYDROLY?
       1324464 "CARBON"
         28197 "CARBONS"
       1334462 "CARBON"
                 ("CARBON" OR "CARBONS")
        509256 "DIOXIDE"
          6821 "DIOXIDES"
        510986 "DIOXIDE"
                 ("DIOXIDE" OR "DIOXIDES")
        242838 "CARBON DIOXIDE"
                 ("CARBON"(W)"DIOXIDE")
L1         434 (CARBOHYDRATE OR POLYSACCHARIDE OR SUGAR) AND HYDROLY? AND "CARB
               ON DIOXIDE"


=> d his

     (FILE 'HOME' ENTERED AT 11:11:54 ON 30 NOV 2007)

     FILE 'CAPLUS' ENTERED AT 11:12:03 ON 30 NOV 2007
L1          434 (CARBOHYDRATE OR POLYSACCHARIDE OR SUGAR) AND HYDROLY? AND "CAR

=> s l1 and prep/rl
       4496022 PREP/RL
L2         135 L1 AND PREP/RL

=> s l2 and py<=2003
      23956048 PY<=2003
L3          98 L2 AND PY<=2003

=> d l3 1-98 ibib kwic

L3   ANSWER 1 OF 98  CAPLUS  COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER:         2004:528114  CAPLUS
DOCUMENT NUMBER:          141:37645
TITLE:                    An improved process for the preparation of ethanol by
                          fermentation of molasses and other fermentable
                          sugar containing substances
INVENTOR(S):              Venkitakrishnan, Guruvayur Raja; Nene, Sanhay Narayan;
                          Chaphekar, Gopal Moreshwar; Jagtap, Himmatrao Sakharam
PATENT ASSIGNEE(S):       Council of Scientific & Industrial Research, India
SOURCE:                   Indian, 19 pp.
                          CODEN: INXXAP
DOCUMENT TYPE:            Patent
LANGUAGE:                 English
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.          KIND   DATE          APPLICATION NO.         DATE
     ---------------     ----   --------      --------------------    --------
     IN 182183            A1    19990123      IN 1991-DE947           19911001 <--
PRIORITY APPLN. INFO.:                        IN 1991-DE947           19911001
OTHER SOURCE(S):          CASREACT 141:37645
TI   An improved process for the preparation of ethanol by fermentation of
     molasses and other fermentable sugar containing substances
PI   IN 182183 A1  19990123
```

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI IN 182183	A1	19990123	IN 1991-DE947	19911001 <--

AB An improved process for the preparation of ethanol by fermentation of molasses and other fermentable **sugar** containing substances which comprises:. Mixing the molasses or other fermentable **sugar** containing substances in the range of 5 to 16%. Heating the mixture to a temperature in the range of 98. . .

IT pH
(biol. effects of; improved process for preparation of ethanol by fermentation of molasses and other fermentable **sugar** containing substances)

IT Industrial liquors
(corn steep liquor; improved process for preparation of ethanol by fermentation of molasses and other fermentable **sugar** containing substances)

IT Separation
(decantation; improved process for preparation of ethanol by fermentation of molasses and other fermentable **sugar** containing substances)

IT Fermentation
(ethanol; improved process for preparation of ethanol by fermentation of molasses and other fermentable **sugar** containing substances)

IT Distillation
Molasses
Separation
Temperature effects, biological
Yeast
(improved process for preparation of ethanol by fermentation of molasses and other fermentable **sugar** containing substances)

IT **Carbohydrates**, processes
Protein **hydrolyzates**
RL: BCP (Biochemical process); BIOL (Biological study); PROC (Process)
(improved process for preparation of ethanol by fermentation of molasses and other fermentable **sugar** containing substances)

IT Separators
(settlers; improved process for preparation of ethanol by fermentation of molasses and other fermentable **sugar** containing substances)

IT 57-13-6, Urea, processes 7487-88-9, Magnesium sulfate, processes 7783-20-2, Ammonium sulfate, processes 14265-44-2, Phosphate, processes
RL: BCP (Biochemical process); BIOL (Biological study); PROC (Process)
(improved process for preparation of ethanol by fermentation of molasses and other fermentable **sugar** containing substances)

IT 64-17-5P, Ethanol, preparation
RL: BMF (Bioindustrial manufacture); BIOL (Biological study); **PREP (Preparation)**
(improved process for preparation of ethanol by fermentation of molasses and other fermentable **sugar** containing substances)

IT 124-38-9P, **Carbon dioxide**, preparation
RL: BYP (Byproduct); PUR (Purification or recovery); **PREP (Preparation)**

(improved process for preparation of ethanol by fermentation of molasses and other
fermentable **sugar** containing substances)

IT 7440-70-2D, Calcium, salts
RL: FMU (Formation, unclassified); REM (Removal or disposal); FORM (Formation, nonpreparative); PROC (Process)
(improved process for preparation of ethanol by fermentation of molasses and other
fermentable **sugar** containing substances)

L3 ANSWER 2 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:61730 CAPLUS
DOCUMENT NUMBER: 140:256124
TITLE: Production of reducing cellulignin through the biomass refinery
AUTHOR(S): Pinatti, Daltro Garcia; Soares, Alvaro Guedes; Conte, Rosa Ana; Lopes, Claudio Rocha; Romao, Erica Leonor; de Oliveira, Isaias
CORPORATE SOURCE: Departamento de Engenharia de Materiais, FAENQUIL, Lorena-SP, Brazil
SOURCE: Congresso Anual - Associacao Brasileira de Metalurgia e Materiais (**2003**), 58th, 1338-1347
CODEN: CAAMEU
PUBLISHER: Associacao Brasileira de Metalurgia e Materiais
DOCUMENT TYPE: Journal; (computer optical disk)
LANGUAGE: English
REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

SO Congresso Anual - Associacao Brasileira de Metalurgia e Materiais (**2003**), 58th, 1338-1347
CODEN: CAAMEU

AB . . . not pollute, it performs thermochem. sequential cracking of any biomass and it consists of 6 stages or units. Dilute acidic pre-**hydrolysis** - biomass is cracked to a **sugar** solution called a pre-**hydrolyzate** and cellulignin powder with 20 MJ/kg of heating power and a low ash content. The pre-**hydrolyzate** is converted to furfural in the furfural reactor. The effluent treatment station generates sludge and recycles water to the biomass. . . can replace feldspar in the ceramic industry. The integral use of biomass allows competition with fossil fuels and chems. The pre-**hydrolysis** reactor is mobile and processes raw biomass in parking lots annex to their production The cost of the cellulignin ranges. . .

IT Feldspar-group minerals
RL: IMF (Industrial manufacture); **PREP (Preparation)**
(in vitrification of nanometer-sized ash obtained in biomass refining for production of ceramic tiles)

IT Carbon black, preparation
RL: IMF (Industrial manufacture); **PREP (Preparation)**
(production of carbon black through biomass refining)

IT Coal, preparation
RL: IMF (Industrial manufacture); **PREP (Preparation)**
(production of carbonaceous fuel for metallurgical purposes through biomass refining)

IT 7440-44-0P, Activated carbon, preparation
RL: IMF (Industrial manufacture); **PREP (Preparation)**
(activated; production of activated carbon through biomass refining)

IT 13397-24-5P, Gypsum, preparation

RL: IMF (Industrial manufacture); **PREP (Preparation)**
(production of agricultural gypsum through biomass refining)

IT 98-01-1P, Furfural, preparation
RL: IMF (Industrial manufacture); **PREP (Preparation)**
(production of furfural through biomass refining)

IT 406699-93-2P, Cellulignin
RL: IMF (Industrial manufacture); **PREP (Preparation)**
(production of reducing cellulignin through biomass refining)

IT 124-38-9, **Carbon dioxide**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactivity of cellulignin produced through biomass refining with)

L3 ANSWER 3 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2003:919092 CAPLUS
DOCUMENT NUMBER: 141:20362
TITLE: Method for extracting active ingredients from marine algae
INVENTOR(S): Cen, Yingzhou
PATENT ASSIGNEE(S): Jinan University, Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 6 pp. CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1389476	A	20030108	CN 2002-134322	20020709 <--

PRIORITY APPLN. INFO.: CN 2002-134322 20020709

PI CN 1389476 A **20030108**

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI CN 1389476	A	20030108	CN 2002-134322	20020709 <--

AB . . . . soaking marine algae especially Sargassum fusiforme, Eucheuma muricatum and Caulerpa sertularioides in acid solution; precipitating with ethanol to obtain crude **polysaccharides**; **hydrolyzing** crude **polysaccharides** with HCl at 75-80° to obtain **polysaccharide hydrolyzate** with different mol. weight; extracting the **polysaccharide**-extracted algae with ethanol, concentrating, extracting under supercrit. condition, separating on high-speed countercurrent chromatog. column with Et acetate-acetone-water (5:4:1) as eluent to obtain caulerpin; extracting the **polysaccharide**-extracted algae with Et acetate, concentrating, separating on high-speed countercurrent chromatog. column with ethanol-acetone-water (5:3:2) as eluent, **hydrolyzing** with acid of pH 2-3, and extracting under supercrit. condition to obtain EPA and DHA.

ST **polysaccharide** caulerpin EPA DHA extn alga; solvent extn **polysaccharide** algae

IT **Polysaccharides**, preparation
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PUR (Purification or recovery); PYP (Physical process); **PREP (Preparation)**; PROC (Process)
(extracting active ingredients from marine algae)

IT 6217-54-5P, DHA 10417-94-4P, EPA 26612-48-6P, Caulerpin

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PUR (Purification or recovery); PYP (Physical process); **PREP (Preparation)**; PROC (Process)
(extracting active ingredients from marine algae)

IT 124-38-9, **Carbon dioxide**, uses
RL: NUU (Other use, unclassified); USES (Uses)
(extracting active ingredients from marine algae)

L3 ANSWER 4 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2003:590726 CAPLUS
DOCUMENT NUMBER: 139:116338
TITLE: Separation of ethanol fermented from biomass fermentation broth using **carbon dioxide**
INVENTOR(S): Lightner, Gene E.
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 6 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
US 2003143704	A1	20030731	US 2001-912893	20010725	<--

PRIORITY APPLN. INFO.: US 2001-912893 20010725

TI Separation of ethanol fermented from biomass fermentation broth using **carbon dioxide**

PI US 2003143704 A1 **20030731**

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI US 2003143704	A1	20030731	US 2001-912893	20010725	<--

AB This is a method to remove ethanol from fermentation of **sugars** contained in a vessel. By providing **carbon dioxide**, containing ethanol, to the vessel, ethanol and volatile compds. formed by fermentation are humidified by the **carbon dioxide.** A supply of **sugars** for fermentation within the vessel is employed to form ethanol and **carbon dioxide.** Upon combining **carbon dioxide**, produced by fermentation, with the **carbon dioxide**, containing ethanol, ethanol humidified **carbon dioxide** is formed. Resulting humidified **carbon dioxide** is removed from the fermentation vessel and subjected to means for condensing ethanol from humidified **carbon dioxide** to supply **carbon dioxide**, containing ethanol, for recycle, and purged **carbon dioxide**, containing ethanol, to remove **carbon dioxide** produced by fermentation Fermentation broth is removed from the vessel to maintain vessel level.

Thereby ethanol is condensed from the humidified **carbon dioxide** to produce ethanol and **carbon dioxide**, containing ethanol, for recycle and removing **carbon dioxide** produced by fermentation and maintaining broth level within the fermentation vessel.

A detailed description and schematics are included.

ST ethanol sepn fermn **carbon dioxide** vapor

IT **Hydrolysis**

(acid, of biomass; separation of ethanol fermented from biomass fermentation broth
using **carbon dioxide**)
IT pH
(biol. effects of; separation of ethanol fermented from biomass fermentation broth
using **carbon dioxide**)
IT Fermentation
(ethanol; separation of ethanol fermented from biomass fermentation broth using
carbon dioxide)
IT Fermentation
(extractive; separation of ethanol fermented from biomass fermentation broth using
carbon dioxide)
IT Biomass
Condensation (physical)
Distillation
Raoult's law
Vapor pressure
(separation of ethanol fermented from biomass fermentation broth using
carbon dioxide)
IT 50-99-7, Dextrose, processes 58-86-6, D-Xylose, processes 9034-32-6, Hemicellulose 11132-73-3, Lignocellulose
RL: BCP (Biochemical process); BIOL (Biological study); PROC (Process)
(separation of ethanol fermented from biomass fermentation broth using
carbon dioxide)
IT 124-38-9, **Carbon dioxide**, processes
RL: BCP (Biochemical process); CPS (Chemical process); PEP (Physical, engineering or chemical process); BIOL (Biological study); PROC (Process)
(separation of ethanol fermented from biomass fermentation broth using
carbon dioxide)
IT 64-17-5P, Ethanol, preparation
RL: BMF (Bioindustrial manufacture); PUR (Purification or recovery); BIOL (Biological study); **PREP (Preparation)**
(separation of ethanol fermented from biomass fermentation broth using
carbon dioxide)

L3 ANSWER 5 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:576912 CAPLUS
DOCUMENT NUMBER: 140:6990
TITLE: Influence of chemical nature of organic wastes on their conversion to hydrogen by heat-shock digested sludge
AUTHOR(S): Lay, Jiunn-Jyi; Fan, Kuo-Shuh; Chang, James-1; Ku, Chia-Hung
CORPORATE SOURCE: Health and Environmental Engineering, Department of Safety, National Kaohsiung First University of Science and Technology, Kaohsiung, Yanchau, Taiwan
SOURCE: International Journal of Hydrogen Energy (**2003**), 28(12), 1361-1367
CODEN: IJHEDX; ISSN: 0360-3199
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

SO International Journal of Hydrogen Energy (**2003**), 28(12), 1361-1367
CODEN: IJHEDX; ISSN: 0360-3199

AB . . . were filled with 10% total solid of rice, potato, fat meat, chicken skin, egg, and lean meat. Hydrogen-producing potential of **carbohydrate**-rich HSOW (rice and potato) was .apprx.20 times larger than that of fat-rich HSOW (fat meat and chicken skin) and of. . . sludge; that is Clostridium-rich sludge, converting fat- and protein-rich HSOW to hydrogen; but the pH threshold for Clostridium-rich sludge consuming **carbohydrates**-rich HSOW occurred at .apprx.5.0. The ammonium production from proteins both consumes hydrogen and affects the pH. In bulk solution, volatile fatty acids (VFA) and alcs. occurred concurrently and the trends of **carbohydrate**-rich HSOW were similar to those of protein-rich HSOW. Considering developments of **carbohydrates** and VFAs together with that of hydrogen one infers that lipids would be **hydrolyzed** to **carbohydrates** and the carbon flow would proceed through acetate/H2 + CO2 cleavage. Indications from cluster anal. of pH development trends are that a co-metabolism would be obtained in wastes rich in **carbohydrate** and protein.

IT Alcohols, preparation
RL: BCP (Biochemical process); BYP (Byproduct); BIOL (Biological study); **PREP (Preparation)**; PROC (Process)
(C2-4; influence of chemical nature of organic wastes on their conversion to hydrogen by heat-shock digested sludge)

IT **Carbohydrates**, preparation
RL: BCP (Biochemical process); BYP (Byproduct); BIOL (Biological study); **PREP (Preparation)**; PROC (Process)
(influence of chemical nature of organic wastes on their conversion to hydrogen by heat-shock digested sludge)

IT **Hydrolysis**
(of fats to free fatty acids; influence of chemical nature of organic wastes on their conversion to hydrogen by heat-shock digested sludge)

IT Fatty acids, preparation
RL: BCP (Biochemical process); BYP (Byproduct); BIOL (Biological study); **PREP (Preparation)**; PROC (Process)
(short-chain, C2-C4; influence of chemical nature of organic wastes on their conversion to hydrogen by heat-shock digested sludge)

IT 1333-74-0P, Hydrogen, preparation
RL: BMF (Bioindustrial manufacture); BIOL (Biological study); **PREP (Preparation)**
(influence of chemical nature of organic wastes on their conversion to hydrogen by heat-shock digested sludge)

IT 74-82-8P, Methane, preparation 14798-03-9P, Ammonium, preparation
RL: BYP (Byproduct); **PREP (Preparation)**
(influence of chemical nature of organic wastes on their conversion to hydrogen by heat-shock digested sludge)

IT 124-38-9, **Carbon dioxide**, formation (nonpreparative)
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
(influence of chemical nature of organic wastes on their conversion to hydrogen by heat-shock digested sludge)

ACCESSION NUMBER: 2003:80058 CAPLUS
DOCUMENT NUMBER: 138:275331
TITLE: Title V permitting strategies for a waste to ethanol production facility

AUTHOR(S): Liang, Kit Y.; Li, Ramon; Webster, David
CORPORATE SOURCE: Malcolm Pirnie, Inc., USA
SOURCE: Proceedings of the Air & Waste Management Association's Annual Conference & Exhibition, 95th, Baltimore, MD, United States, June 23-27, 2002 (**2002**), 4326-4333. Air & Waste Management Association: Pittsburgh, Pa.
CODEN: 69DMAK; ISBN: 0-923204-45-8
DOCUMENT TYPE: Conference; (computer optical disk)
LANGUAGE: English

SO Proceedings of the Air & Waste Management Association's Annual Conference & Exhibition, 95th, Baltimore, MD, United States, June 23-27, 2002 (**2002**), 4326-4333 Publisher: Air & Waste Management Association, Pittsburgh, Pa.
CODEN: 69DMAK; ISBN: 0-923204-45-8

AB . . . facility. The facility is designed to use municipal solid waste (MSW) and sewage sludge to produce fuel grade ethanol and **carbon dioxide** (CO2) through a concentrated acid **hydrolysis**-fermentation process. Best Available Control Technologies (BACT) are included in the facility design: wet scrubbers for controlling acid and odors, lime. . .

IT **Carbohydrates**, reactions
RL: BSU (Biological study, unclassified); FMU (Formation, unclassified); RCT (Reactant); BIOL (Biological study); FORM (Formation, nonpreparative); RACT (Reactant or reagent)
(Title V permitting strategies for waste to ethanol production facility)

IT **Hydrolysis**
(acid; Title V permitting strategies for waste to ethanol production facility)

IT 124-38-9, **Carbon dioxide**, processes
RL: BSU (Biological study, unclassified); CPS (Chemical process); FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); POL (Pollutant); REM (Removal or disposal); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence); PROC (Process)
(Title V permitting strategies for waste to ethanol production facility)

IT 64-17-5P, Ethanol, processes
RL: BSU (Biological study, unclassified); CPS (Chemical process); IMF (Industrial manufacture); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); BIOL (Biological study); **PREP (Preparation)**; PROC (Process); USES (Uses)
(fuel; Title V permitting strategies for waste to ethanol production facility)

L3 ANSWER 7 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:923527 CAPLUS
DOCUMENT NUMBER: 138:71940
TITLE: On-line estimation of **sugar** concentration for control of fed-batch fermentation of lignocellulosic **hydrolyzates** by Saccharomyces cerevisiae
AUTHOR(S): Nilsson, A.; Taherzadeh, M. J.; Liden, G.
CORPORATE SOURCE: Department of Chemical Engineering II, Lund Institute of Technology, Lund, SE-221 00, Swed.
SOURCE: Bioprocess and Biosystems Engineering (**2002**), 25(3), 183-191
CODEN: BBEIBV; ISSN: 1615-7591
PUBLISHER: Springer-Verlag

DOCUMENT TYPE: Journal
LANGUAGE: English
REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI On-line estimation of **sugar** concentration for control of fed-batch fermentation of lignocellulosic **hydrolyzates** by Saccharomyces cerevisiae

SO Bioprocess and Biosystems Engineering (**2002**), 25(3), 183-191
CODEN: BBEIBV; ISSN: 1615-7591

AB A feed control strategy, based on estimated **sugar** concns., was developed with the purpose of avoiding severe inhibition of the yeast Saccharomyces cerevisiae during fermentation of spruce **hydrolyzate.** The sum of the fermentable hexose **sugars**, glucose and mannose, was estimated from online measurements of **carbon dioxide** evolution rate and biomass concentration by use of a simple stoichiometric model.
The feed rate of the **hydrolyzate** was controlled to maintain constant **sugar** concentration during fed-batch fermentation, and the effect of different set-point concns. was investigated using both untreated and detoxified **hydrolyzates.** The fed-batch cultivations were evaluated with respect to cellular physiol. in terms of the specific ethanol productivities, ethanol yields, and viability of the yeast. The simple stoichiometric model used resulted in a good agreement between estimated **sugar** concns. and off-line detns. of **sugar** concns. Furthermore, the control strategy used made it possible to maintain a constant **sugar** concentration without major oscillations in the feed rate or the **sugar** concentration For untreated **hydrolyzates** the average ethanol productivity could be increased by more than 130% compared to batch fermentation The average ethanol productivity was
increased from 0.12 to 0.28 g/g h. The productivity also increased for detoxified **hydrolyzates**, where an increase of 16% was found (from 0.50 to 0.58 g/g h).

IT Ion exchange chromatography
(anal.; online estimation of **sugar** concentration for control of fed-batch fermentation of lignocellulosic **hydrolyzates** by Saccharomyces cerevisiae)

IT Fermentation
(ethanol; online estimation of **sugar** concentration for control of fed-batch fermentation of lignocellulosic **hydrolyzates** by Saccharomyces cerevisiae)

IT Fermentation
(fed-batch; online estimation of **sugar** concentration for control of fed-batch fermentation of lignocellulosic **hydrolyzates** by Saccharomyces cerevisiae)

IT Simulation and Modeling
(for feeding control; online estimation of **sugar** concentration for control of fed-batch fermentation of lignocellulosic **hydrolyzates** by Saccharomyces cerevisiae)

IT Picea
(**hydrolyzate** of; online estimation of **sugar** concentration for control of fed-batch fermentation of lignocellulosic **hydrolyzates** by Saccharomyces cerevisiae)

IT Flow injection analysis
(of hexoses; online estimation of **sugar** concentration for control of fed-batch fermentation of lignocellulosic **hydrolyzates** by Saccharomyces cerevisiae)

IT Saccharomyces cerevisiae
(online estimation of **sugar** concentration for control of fed-batch fermentation
of lignocellulosic **hydrolyzates** by Saccharomyces cerevisiae)
IT Process control
(online; online estimation of **sugar** concentration for control of fed-batch fermentation of lignocellulosic **hydrolyzates** by Saccharomyces cerevisiae)
IT 11132-73-3, Lignocellulose
RL: BCP (Biochemical process); BIOL (Biological study); PROC (Process)
(**hydrolyzates**; online estimation of **sugar** concentration for control of fed-batch fermentation of lignocellulosic **hydrolyzates** by Saccharomyces cerevisiae)
IT 50-99-7, Dextrose, analysis 58-86-6, D-Xylose, analysis 59-23-4, D-Galactose, analysis 3458-28-4, D-Mannose 5328-37-0, L-Arabinose
RL: ANT (Analyte); BCP (Biochemical process); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(online estimation of **sugar** concentration for control of fed-batch fermentation
of lignocellulosic **hydrolyzates** by Saccharomyces cerevisiae)
IT 64-17-5P, Ethanol, preparation
RL: ANT (Analyte); BMF (Bioindustrial manufacture); ANST (Analytical study); BIOL (Biological study); **PREP (Preparation)**
(online estimation of **sugar** concentration for control of fed-batch fermentation
of lignocellulosic **hydrolyzates** by Saccharomyces cerevisiae)
IT 124-38-9P, **Carbon dioxide**, preparation
RL: ANT (Analyte); BYP (Byproduct); ANST (Analytical study); **PREP (Preparation)**
(online estimation of **sugar** concentration for control of fed-batch fermentation
of lignocellulosic **hydrolyzates** by Saccharomyces cerevisiae)
IT 56-81-5P, Glycerol, preparation
RL: BYP (Byproduct); **PREP (Preparation)**
(online estimation of **sugar** concentration for control of fed-batch fermentation
of lignocellulosic **hydrolyzates** by Saccharomyces cerevisiae)
IT 64-19-7, Acetic acid, formation (nonpreparative) 67-47-0, Hydroxymethylfurfural 98-01-1, Furfural, formation (nonpreparative)
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
(online estimation of **sugar** concentration for control of fed-batch fermentation
of lignocellulosic **hydrolyzates** by Saccharomyces cerevisiae)

ACCESSION NUMBER: 2002:814762 CAPLUS
DOCUMENT NUMBER: 137:309616
TITLE: High speed, consecutive batch or continuous, low effluent process for the production of ethanol from molasses, starches, or **sugars**
INVENTOR(S): Dale, M. Clark; Moelhman, Mark
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 17 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002155583	A1	20021024	US 2002-56063	20020128 <--
US 6861248	B2	20050301		
US 2005019932	A1	20050127	US 2004-921182	20040819
US 7070967	B2	20060704		

PRIORITY APPLN. INFO.: US 2001-264070P P 20010126
US 2002-56063 A1 20020128

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI High speed, consecutive batch or continuous, low effluent process for the production of ethanol from molasses, starches, or **sugars**

PI US 2002155583 A1 **20021024**

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2002155583	A1	20021024	US 2002-56063	20020128 <--
US 6861248	B2	20050301		
US 2005019932	A1	20050127	US 2004-921182	20040819
US 7070967	B2	20060704		

AB A flocculent Saccharomyces cerevisiae strain (BPSC-15) produces higher yields of ethanol in fermns. of fermentable **sugar** or fermentable starch/enzyme. Thus, Saccharomyces cerevisiae strain BPSC-15 was employed for rapid fermentation of molasses, corn syrup, or starch using. . .

IT Residence time
(average; high speed, consecutive batch or continuous, low effluent process for the production of ethanol from molasses, starches, or **sugars**)

IT Molasses
(beet; high speed, consecutive batch or continuous, low effluent process for the production of ethanol from molasses, starches, or **sugars**)

IT Flocculation
(bioflocculation; high speed, consecutive batch or continuous, low effluent process for the production of ethanol from molasses, starches, or **sugars**)

IT pH
(biol. effects of; high speed, consecutive batch or continuous, low effluent process for the production of ethanol from molasses, starches, or **sugars**)

IT Fermentation
(continuous; high speed, consecutive batch or continuous, low effluent process for the production of ethanol from molasses, starches, or **sugars**)

IT Industrial liquors
(corn steep liquor; high speed, consecutive batch or continuous, low effluent process for the production of ethanol from molasses, starches, or **sugars**)

IT Fermentation
(ethanol; high speed, consecutive batch or continuous, low effluent process for the production of ethanol from molasses, starches, or **sugars**)

IT Aeration
Agitation (mechanical)
Reynolds number
Saccharomyces cerevisiae
Simulation and Modeling

Temperature effects, biological
(high speed, consecutive batch or continuous, low effluent process for the production of ethanol from molasses, starches, or **sugars**)

IT Syrups (sweetening agents)
(**hydrolyzed** starch; high speed, consecutive batch or continuous, low effluent process for the production of ethanol from molasses, starches, or **sugars**)

IT Cell morphology
(pellets; high speed, consecutive batch or continuous, low effluent process for the production of ethanol from molasses, starches, or **sugars**)

IT Distillery slops
(recycle of; high speed, consecutive batch or continuous, low effluent process for the production of ethanol from molasses, starches, or **sugars**)

IT Fermentation wastes
(recycling of; high speed, consecutive batch or continuous, low effluent process for the production of ethanol from molasses, starches, or **sugars**)

IT Fermentation
(repeat batch; high speed, consecutive batch or continuous, low effluent process for the production of ethanol from molasses, starches, or **sugars**)

IT Fermentation apparatus
(tower fermentor; high speed, consecutive batch or continuous, low effluent process for the production of ethanol from molasses, starches, or **sugars**)

IT 50-99-7, Dextrose, processes 57-50-1, Sucrose, processes 9005-25-8, Starch, processes
RL: BCP (Biochemical process); BIOL (Biological study); PROC (Process)
(high speed, consecutive batch or continuous, low effluent process for the production of ethanol from molasses, starches, or **sugars**)

IT 64-17-5P, Ethanol, preparation
RL: BMF (Bioindustrial manufacture); BIOL (Biological study); **PREP (Preparation)**
(high speed, consecutive batch or continuous, low effluent process for the production of ethanol from molasses, starches, or **sugars**)

IT 56-81-5P, Glycerol, preparation 124-38-9P, **Carbon dioxide**, preparation
RL: BYP (Byproduct); **PREP (Preparation)**
(high speed, consecutive batch or continuous, low effluent process for the production of ethanol from molasses, starches, or **sugars**)

L3 ANSWER 9 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER:	2002:675761 CAPLUS
DOCUMENT NUMBER:	137:184820
TITLE:	Process for the fractionation of cereal brans
INVENTOR(S):	Kvist, Sten; Carlsson, Tommie; Lawther, John Mark; Basile de Castro, Fernando
PATENT ASSIGNEE(S):	Biovelop International B.V., Neth.
SOURCE:	PCT Int. Appl., 49 pp. CODEN: PIXXD2
DOCUMENT TYPE:	Patent
LANGUAGE:	English
FAMILY ACC. NUM. COUNT:	1
PATENT INFORMATION:	

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     PATENT NO.          KIND    DATE          APPLICATION NO.        DATE
     ---------------     ----    --------      --------------------   --------
     WO 2002067698        A1     20020906      WO 2002-SE309          20020221 <--
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,
             PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ,
             UA, UG, US, UZ, VN, YU, ZA, ZM, ZW
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,
             CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,
             BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
     SE 2001000655        A      20020827      SE 2001-655            20010226 <--
     SE 521559            C2     20031111
     SE 2001003328        A      20020827      SE 2001-3328           20011004 <--
     SE 526999            C2     20051206
     CA 2438270           A1     20020906      CA 2002-2438270        20020221 <--
     AU 2002233865        A1     20020912      AU 2002-233865         20020221 <--
     AU 2002233865        B2     20070712
     EP 1363504           A1     20031126      EP 2002-700929         20020221 <--
     EP 1363504           B1     20060531
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
     JP 2004520058        T      20040708      JP 2002-567080         20020221
     BR 2002007552        A      20040914      BR 2002-7552           20020221
     AT 327683            T      20060615      AT 2002-700929         20020221
     RU 2295868           C2     20070327      RU 2003-128880         20020221
     US 2005089602        A1     20050428      US 2003-643402         20030819
PRIORITY APPLN. INFO.:                         SE 2001-655         A  20010226
                                               SE 2001-3328        A  20011004
                                               WO 2002-SE309       W  20020221
REFERENCE COUNT:          7      THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS
                                 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT
PI   WO 2002067698 A1   20020906
     PATENT NO.          KIND    DATE          APPLICATION NO.        DATE
     ---------------     ----    --------      --------------------   --------
PI   WO 2002067698        A1     20020906      WO 2002-SE309          20020221 <--
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,
             PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ,
             UA, UG, US, UZ, VN, YU, ZA, ZM, ZW
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,
             CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,
             BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
     SE 2001000655        A      20020827      SE 2001-655            20010226 <--
     SE 521559            C2     20031111
     SE 2001003328        A      20020827      SE 2001-3328           20011004 <--
     SE 526999            C2     20051206
     CA 2438270           A1     20020906      CA 2002-2438270        20020221 <--
     AU 2002233865        A1     20020912      AU 2002-233865         20020221 <--
     AU 2002233865        B2     20070712
     EP 1363504           A1     20031126      EP 2002-700929         20020221 <--
     EP 1363504           B1     20060531
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
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JP 2004520058	T	20040708	JP 2002-567080	20020221
BR 2002007552	A	20040914	BR 2002-7552	20020221
AT 327683	T	20060615	AT 2002-700929	20020221
RU 2295868	C2	20070327	RU 2003-128880	20020221
US 2005089602	A1	20050428	US 2003-643402	20030819

AB . . . phys. separating the main bran factions, i.e. insol. phase (pericarp and aleurone layer), germ-rich fraction, residual endosperm fraction and soluble **sugars.** A second step consists of fractionating cereal brans substantially free of soluble compds., hence insol. phase from the above-mentioned first. . .

IT Fats and Glyceridic oils, biological studies
RL: FFD (Food or feed use); IMF (Industrial manufacture); BIOL (Biological study); **PREP (Preparation)**; USES (Uses)
(cereal germ; process for the fractionation of cereal brans)

IT Proteins
RL: FFD (Food or feed use); IMF (Industrial manufacture); BIOL (Biological study); **PREP (Preparation)**; USES (Uses)
(fat-binding; process for the fractionation of cereal brans)

IT Sterols
RL: FFD (Food or feed use); IMF (Industrial manufacture); BIOL (Biological study); **PREP (Preparation)**; USES (Uses)
(phyto-; process for the fractionation of cereal brans)

IT Fat substitutes
Glycolipids
Lecithins
Lignans
Monosaccharides
Phospholipids, biological studies
Protein **hydrolyzates**
RL: FFD (Food or feed use); IMF (Industrial manufacture); BIOL (Biological study); **PREP (Preparation)**; USES (Uses)
(process for the fractionation of cereal brans)

IT **Carbohydrates**, preparation
Oligosaccharides, preparation
Proteins
RL: IMF (Industrial manufacture); **PREP (Preparation)**
(process for the fractionation of cereal brans)

IT Fats and Glyceridic oils, biological studies
RL: FFD (Food or feed use); IMF (Industrial manufacture); BIOL (Biological study); **PREP (Preparation)**; USES (Uses)
(rye germ; process for the fractionation of cereal brans)

IT Fats and Glyceridic oils, biological studies
RL: FFD (Food or feed use); IMF (Industrial manufacture); BIOL (Biological study); **PREP (Preparation)**; USES (Uses)
(wheat germ; process for the fractionation of cereal brans)

IT 69-79-4P, Maltose 1109-28-0P, Maltotriose 1406-18-4P, Vitamin E 9040-27-1P, Arabinoxylan 9041-22-9P, β-Glucan 78473-71-9P, Enterolactone
RL: FFD (Food or feed use); IMF (Industrial manufacture); BIOL (Biological study); **PREP (Preparation)**; USES (Uses)
(process for the fractionation of cereal brans)

IT 9034-32-6P, Hemicellulose
RL: IMF (Industrial manufacture); **PREP (Preparation)**
(process for the fractionation of cereal brans)

IT 124-38-9, **Carbon dioxide**, biological studies
RL: FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(supercrit.; process for the fractionation of cereal brans)

L3 ANSWER 10 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2002:670762 CAPLUS

DOCUMENT NUMBER: 137:351543

TITLE: Supercritical fluid extraction of a lignocellulosic **hydrolysate** of spruce for detoxification and to facilitate analysis of inhibitors

AUTHOR(S): Persson, Per; Larsson, Simona; Jonsson, Leif J.; Nilvebrant, Nils-Olof; Sivik, Bjorn; Munteanu, Florentina; Thorneby, Lars; Gorton, Lo

CORPORATE SOURCE: Department of Analytical Chemistry, Lund University, Lund, SE-22100, Swed.

SOURCE: Biotechnology and Bioengineering (**2002**), 79(6), 694-700
CODEN: BIBIAU; ISSN: 0006-3592

PUBLISHER: John Wiley & Sons, Inc.

DOCUMENT TYPE: Journal

LANGUAGE: English

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Supercritical fluid extraction of a lignocellulosic **hydrolysate** of spruce for detoxification and to facilitate analysis of inhibitors

SO Biotechnology and Bioengineering (**2002**), 79(6), 694-700
CODEN: BIBIAU; ISSN: 0006-3592

AB This work describes a novel approach to detoxify lignocellulosic **hydrolyzates** and facilitate the anal. of inhibitory compds., namely supercrit. fluid extraction (SFE). The efficiency of the fermentation of lignocellulosic dilute-acid **hydrolyzates** depends upon the composition of the **hydrolyzate** and the organism used. Furthermore, it has been shown that inhibitors in the **hydrolyzate** reduce the fermentation yield. This knowledge has given rise to the need to identify and remove the inhibiting compds. Sample. . . a clean and concentrated sample for the anal. system, facilitate the characterization of inhibitors, or indeed any compound in the **hydrolyzates.** Removal of inhibitors was performed with countercurrent flow supercrit. fluid extraction of liquid **hydrolyzates.** Three different groups of inhibitors (furan derivs., phenolic compds., and aliphatic acids) and **sugars** were subsequently analyzed in the **hydrolyzate**, extracted **hydrolyzate**, and extract The effect of the SFE treatment was examined with respect to fermentability with Saccharomyces cerevisiae. Not only did the extraction provide a clean and concentrated sample (extract) for anal., but also a **hydrolyzate** with increased fermentability as well as lower concns. of inhibitors such as phenolics and furan derivs.

ST supercrit fluid extn lignocellulose **hydrolyzate** detoxification

IT **Hydrolysis**
(acid; supercrit. fluid extraction of a spruce lignocellulose **hydrolyzate** for detoxification and to facilitate anal. of inhibitors)

IT Fermentation
(ethanol; supercrit. fluid extraction of a spruce lignocellulose **hydrolyzate** for detoxification and to facilitate anal. of inhibitors)

IT Picea
(supercrit. fluid extraction of a spruce lignocellulose **hydrolyzate** for detoxification and to facilitate anal. of inhibitors)

IT Carboxylic acids, analysis
Phenols, analysis
RL: ANT (Analyte); FMU (Formation, unclassified); REM (Removal or disposal); ANST (Analytical study); FORM (Formation, nonpreparative); PROC (Process)
(supercrit. fluid extraction of a spruce lignocellulose **hydrolyzate** for detoxification and to facilitate anal. of inhibitors)

IT Extraction
(supercrit.; supercrit. fluid extraction of a spruce lignocellulose **hydrolyzate** for detoxification and to facilitate anal. of inhibitors)

IT Stress, microbial
(toxic; supercrit. fluid extraction of a spruce lignocellulose **hydrolyzate** for detoxification and to facilitate anal. of inhibitors)

IT 64-18-6, Formic acid, analysis 64-19-7, Acetic acid, analysis 67-47-0, 5-Hydroxymethylfurfural 98-01-1, Furfural, analysis 99-96-7, 4-Hydroxybenzoic acid, analysis 121-33-5, Vanillin 121-34-6, Vanillic acid 123-76-2, Levulinic acid 458-36-6, Coniferyl aldehyde 498-02-2, Acetoguaiacone 2034-60-8 2034-61-9 2503-46-0 4899-73-4 4899-74-5
RL: ANT (Analyte); FMU (Formation, unclassified); REM (Removal or disposal); ANST (Analytical study); FORM (Formation, nonpreparative); PROC (Process)
(supercrit. fluid extraction of a spruce lignocellulose **hydrolyzate** for detoxification and to facilitate anal. of inhibitors)

IT 64-17-5P, Ethanol, preparation
RL: BMF (Bioindustrial manufacture); BIOL (Biological study); **PREP (Preparation)**
(supercrit. fluid extraction of a spruce lignocellulose **hydrolyzate** for detoxification and to facilitate anal. of inhibitors)

IT 124-38-9, **Carbon dioxide**, processes
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(supercrit. fluid extraction of a spruce lignocellulose **hydrolyzate** for detoxification and to facilitate anal. of inhibitors)

IT 11132-73-3, Lignocellulose
RL: RCT (Reactant); RACT (Reactant or reagent)
(supercrit. fluid extraction of a spruce lignocellulose **hydrolyzate** for detoxification and to facilitate anal. of inhibitors)

L3 ANSWER 11 OF 98 CAPLUS

ACCESSION NUMBER: 2002:624516 CAPLUS
DOCUMENT NUMBER: 137:124298
TITLE: Process for preparing liquid for hydrogen fermentation from **carbohydrate**, protein, and organic acid
INVENTOR(S): Shen, Jianquan
PATENT ASSIGNEE(S): Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 8 pp. CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1328158	A	20011226	CN 2000-108095	20000614 <--

PRIORITY APPLN. INFO.: CN 2000-108095 20000614

TI Process for preparing liquid for hydrogen fermentation from **carbohydrate**, protein, and organic acid

PI CN 1328158 A **20011226**

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI CN 1328158	A	20011226	CN 2000-108095	20000614 <--

AB The liquid used for H2 fermentation is prepared by **hydrolyzing** **carbohydrate**- and protein-containing raw material (such as grains) with water at room temperature for 1-4 m under bubbling N2 or CO2. . .

IT Fermentation
(anaerobic; process for preparing liquid for hydrogen fermentation from **carbohydrate**, protein, and organic acid)

IT Cereal (grain)
Temperature effects, biological
(process for preparing liquid for hydrogen fermentation from **carbohydrate**, protein, and organic acid)

IT **Carbohydrates**, reactions
Carboxylic acids, reactions
Proteins
RL: RCT (Reactant); RACT (Reactant or reagent)
(process for preparing liquid for hydrogen fermentation from **carbohydrate**, protein, and organic acid)

IT 1333-74-0P, Hydrogen, preparation
RL: BPN (Biosynthetic preparation); BIOL (Biological study); **PREP (Preparation)**
(process for preparing liquid for hydrogen fermentation from **carbohydrate**, protein, and organic acid)

IT 124-38-9, **Carbon dioxide**, biological studies
7727-37-9, Nitrogen, biological studies 7782-44-7, Oxygen, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(process for preparing liquid for hydrogen fermentation from **carbohydrate**, protein, and organic acid)

L3 ANSWER 12 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2002:323665 CAPLUS
DOCUMENT NUMBER: 137:51412
TITLE: Mass production of methane from food wastes with concomitant wastewater treatment
AUTHOR(S): Kim, Jung K.; Cho, Jae H.; Lee, Jung S.; Hahm, Kyung S.; Park, Don H.; Kim, Si W.
CORPORATE SOURCE: Department of Environmental Engineering, Chosun University, Gwangju, 501-759, S. Korea
SOURCE: Applied Biochemistry and Biotechnology (**2002**), 98-100(Biotechnology for Fuels and Chemicals), 753-764
CODEN: ABIBDL; ISSN: 0273-2289
PUBLISHER: Humana Press Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English
REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

SO Applied Biochemistry and Biotechnology (**2002**), 98-100(Biotechnology for Fuels and Chemicals), 753-764
CODEN: ABIBDL; ISSN: 0273-2289

AB . . . for production of methane at a pilot scale. This process consists of

three stages. The first stage is a semianaerobic **hydrolysis** /acidogenic step in which organic wastes are converted to various **sugars**, amino acids, and volatile fatty acids (VFAs). Operation temperature and pH were 45°C, and 5.0-5.5, resp. Hydraulic retention time (HRT) was 2 d. To remove the putrid odor and to enhance the **hydrolysis** of organic wastes, a mixture of bacteria isolated from landfill soil was inoculated into the reactor. Total COD (tCOD) and. . . and 5.0-5.5, resp. HRT was 2 d. The third stage was a strictly anaerobic methane fermentation step producing methane and **carbon dioxide** from VFAs. The working volume of upflow anaerobic sludge blanket (UASB) type reactor was 1200 L, and operation temperature and. . .

IT Fatty acids, processes
RL: BCP (Biochemical process); BPN (Biosynthetic preparation); BIOL (Biological study); **PREP (Preparation)**; PROC (Process)
(short-chain; methane production from food wastes with concomitant wastewater treatment)

IT 64-19-7P, Acetic acid, processes 79-09-4P, Propanoic acid, processes 107-92-6P, Butanoic acid, processes 109-52-4P, Pentanoic acid, processes 142-62-1P, Hexanoic acid, processes
RL: BCP (Biochemical process); BPN (Biosynthetic preparation); BIOL (Biological study); **PREP (Preparation)**; PROC (Process)
(methane production from food wastes with concomitant wastewater treatment)

IT 74-82-8P, Methane, preparation
RL: BMF (Bioindustrial manufacture); BIOL (Biological study); **PREP (Preparation)**
(methane production from food wastes with concomitant wastewater treatment)

IT 124-38-9P, **Carbon dioxide**, preparation
RL: BYP (Byproduct); **PREP (Preparation)**
(methane production from food wastes with concomitant wastewater treatment)

L3 ANSWER 13 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER:	2002:3080 CAPLUS
DOCUMENT NUMBER:	136:219450
TITLE:	Direct splitting of water under visible light irradiation with an oxide semiconductor photocatalyst
AUTHOR(S):	Zou, Zhlgang; Ye, Jinhua; Sayama, Kazuhlro; Arakawa, Hironorl
CORPORATE SOURCE:	Photoreaction Control Research Center, National Institute of Advanced Industrial Science and Technology, Tsukuba, Ibaraki, 305-8565, Japan
SOURCE:	Nature (London, United Kingdom) (**2001**), 414(6864), 625-627 CODEN: NATUAS; ISSN: 0028-0836
PUBLISHER:	Nature Publishing Group
DOCUMENT TYPE:	Journal
LANGUAGE:	English
REFERENCE COUNT:	15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

SO Nature (London, United Kingdom) (**2001**), 414(6864), 625-627
CODEN: NATUAS; ISSN: 0028-0836

AB . . . dean and renewable source for hydrogen fuel. The first photocatalysts suitable for water splitting, or for activating hydrogen production from **carbohydrate** compds. made by plants from water and **carbon dioxide**, were developed several decades ago. But these catalysts operate with UV light, which accounts for only 4% of the incoming. . .

IT **Hydrolysis**

(photochem., photocatalytic; direct splitting of water under visible light irradiation with oxide semiconductor photocatalyst)

IT 1333-74-0P, Hydrogen, preparation
RL: IMF (Industrial manufacture); **PREP (Preparation)**
(direct splitting of water under visible light irradiation with oxide semiconductor photocatalyst)

L3 ANSWER 14 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2002:327 CAPLUS
DOCUMENT NUMBER: 136:198976
TITLE: Metabolic study of the adaptation of the yeast Candida guilliermondii to sugarcane bagasse **hydrolysate**
AUTHOR(S): Sene, L.; Converti, A.; Zilli, M.; Felipe, M. G. A.; Silva, S. S.
CORPORATE SOURCE: Department of Chemical and Process Engineering "G. B. Bonino", University of Genoa, Genoa, 16145, Italy
SOURCE: Applied Microbiology and Biotechnology (**2001**), 57(5-6), 738-743
CODEN: AMBIDG; ISSN: 0175-7598
PUBLISHER: Springer-Verlag
DOCUMENT TYPE: Journal
LANGUAGE: English
REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Metabolic study of the adaptation of the yeast Candida guilliermondii to sugarcane bagasse **hydrolysate**

SO Applied Microbiology and Biotechnology (**2001**), 57(5-6), 738-743
CODEN: AMBIDG; ISSN: 0175-7598

AB Batch xylitol production from concentrated sugarcane bagasse **hydrolyzate** by Candida guilliermondii was performed by progressively adapting the cells to the medium. Samples were analyzed to monitor **sugar** and acetic acid consumption, xylitol, arabitol, ethanol, and **carbon dioxide** production, as well as cell growth. Both xylitol yield and volumetric productivity remarkably increased with the number of adaptations, demonstrating. . . that the ore adapted the cells, the better the capacity of the yeast to reduce xylose to xylitol in hemicellulose **hydrolyzates.** Substrate and product concns. were used in carbon material balances to study in which way the different carbon sources were. . .

ST Candida adaptation **hydrolyzed** bagasse xylitol fermn

IT Fermentation
(batch; metabolic study of adaptation of yeast Candida guilliermondii to sugarcane bagasse **hydrolyzate**)

IT Growth, microbial
(exponential; metabolic study of adaptation of yeast Candida guilliermondii to sugarcane bagasse **hydrolyzate**)

IT Bagasse
(**hydrolyzate**; metabolic study of adaptation of yeast Candida guilliermondii to sugarcane bagasse **hydrolyzate**)

IT Growth, microbial
(lag phase; metabolic study of adaptation of yeast Candida guilliermondii to sugarcane bagasse **hydrolyzate**)

IT Adaptation, microbial
Candida guilliermondii
Energy metabolism, microbial
Respiration, microbial

(metabolic study of adaptation of yeast Candida guilliermondii to sugarcane bagasse **hydrolyzate**)

IT Growth, microbial
(stationary phase; metabolic study of adaptation of yeast Candida guilliermondii to sugarcane bagasse **hydrolyzate**)

IT 50-99-7, Dextrose, processes 58-86-6, D-Xylose, processes 64-19-7, Acetic acid, processes 10323-20-3, D-Arabinose
RL: BCP (Biochemical process); BIOL (Biological study); PROC (Process)
(metabolic study of adaptation of yeast Candida guilliermondii to sugarcane bagasse **hydrolyzate**)

IT 87-99-0P, Xylitol
RL: BMF (Bioindustrial manufacture); BIOL (Biological study); **PREP (Preparation)**
(metabolic study of adaptation of yeast Candida guilliermondii to sugarcane bagasse **hydrolyzate**)

IT 64-17-5P, Ethanol, preparation 124-38-9P, **Carbon dioxide**, preparation 2152-56-9P, Arabitol
RL: BYP (Byproduct); **PREP (Preparation)**
(metabolic study of adaptation of yeast Candida guilliermondii to sugarcane bagasse **hydrolyzate**)

L3 ANSWER 15 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2001:781702 CAPLUS
DOCUMENT NUMBER: 136:70178
TITLE: Well-defined glycopolymer amphiphiles for liquid and supercritical **carbon dioxide** applications
AUTHOR(S): Ye, Weijun; Wells, Sharon; Desimone, Joseph M.
CORPORATE SOURCE: Department of Chemistry, NSF Science and Technology Center for Environmentally Responsible Solvents and Processes, University of North Carolina at Chapel Hill, Chapel Hill, NC, 27599-3290, USA
SOURCE: Journal of Polymer Science, Part A: Polymer Chemistry (**2001**), 39(21), 3841-3849
CODEN: JPACEC; ISSN: 0887-624X
PUBLISHER: John Wiley & Sons, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English
REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Well-defined glycopolymer amphiphiles for liquid and supercritical **carbon dioxide** applications

SO Journal of Polymer Science, Part A: Polymer Chemistry (**2001**), 39(21), 3841-3849
CODEN: JPACEC; ISSN: 0887-624X

AB . . . Their solubility in CO2 was heavily influenced by the amphiphilic structure, such as the copolymer compns. and the polarities of **sugar** block. Light-scattering studies showed that, after removal of the protective groups, the deprotected block copolymer formed aggregate structures in liquid. . . .

ST glucose glycopolymer block copolymer prepn anionic polymn; **carbon dioxide** amphiphile glucose glycopolymer block copolymer fluoropolymer

IT Polymerization
(anionic; preparation and properties of well-defined glycopolymer amphiphiles for liquid and supercrit. **carbon dioxide** applications)

IT Amphiphiles
Molecular weight
Molecular weight distribution
Solubility
Supercritical fluids
(preparation and properties of well-defined glycopolymer amphiphiles for liquid and supercrit. **carbon dioxide** applications)
IT Fluoropolymers, preparation
RL: PRP (Properties); SPN (Synthetic preparation); **PREP (Preparation)**
(preparation and properties of well-defined glycopolymer amphiphiles for liquid and supercrit. **carbon dioxide** applications)
IT 6613-70-3P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(monomer; preparation and properties of well-defined glycopolymer amphiphiles for liquid and supercrit. **carbon dioxide** applications)
IT 124-38-9, **Carbon dioxide**, properties
RL: PRP (Properties)
(preparation and properties of well-defined glycopolymer amphiphiles for liquid and supercrit. **carbon dioxide** applications)
IT 25101-93-3P 373593-92-1DP, **hydrolyzed** 373593-92-1P
RL: PRP (Properties); SPN (Synthetic preparation); **PREP (Preparation)**
(preparation and properties of well-defined glycopolymer amphiphiles for liquid and supercrit. **carbon dioxide** applications)
IT 582-52-5 760-93-0, Methacrylic anhydride
RL: RCT (Reactant); RACT (Reactant or reagent)
(starting material; preparation and properties of well-defined glycopolymer amphiphiles for liquid and supercrit. **carbon dioxide** applications)

L3 ANSWER 16 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2001:744280 CAPLUS
DOCUMENT NUMBER: 136:36454
TITLE: Continuous cultivation of dilute-acid **hydrolysates** to ethanol by immobilized Saccharomyces cerevisiae
AUTHOR(S): Taherzadeh, Mohammad J.; Millati, Ria; Niklasson, Claes
CORPORATE SOURCE: Department of Chemical Reaction Engineering, Chalmers University of Technology, Goteborg, S-412 96, Swed.
SOURCE: Applied Biochemistry and Biotechnology (**2001**), 95(1), 45-57
CODEN: ABIBDL; ISSN: 0273-2289
PUBLISHER: Humana Press Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 136:36454
REFERENCE COUNT: 43 THERE ARE 43 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT
TI Continuous cultivation of dilute-acid **hydrolysates** to ethanol by immobilized Saccharomyces cerevisiae
SO Applied Biochemistry and Biotechnology (**2001**), 95(1), 45-57
CODEN: ABIBDL; ISSN: 0273-2289
AB The continuous cultivation of immobilized Saccharomyces cerevisiae CBS

8066 on dilute-acid **hydrolyzates** of forest residuals was investigated. The yeast cells were immobilized in 2-4% Ca-alginate beads. The 2% beads were not stable.. . . 3 wk when an extra resource of calcium ions was available in the medium. The continuous cultivation of a dilute-acid **hydrolyzate** by the immobilized cells at dilution rates of 0.3, 0.5, and 0.6 h-1 resulted in 86, 83, and 79% **sugar** consumption, resp., and an ethanol yield between 0.45 and 0.48 g/g. The **hydrolyzate** was fermentable at a dilution rate of 0.1 h-1 in a free-cell system but washed out at a dilution rate of 0.2 h-1. The continuous cultivation of a more inhibiting **hydrolyzate** was not successful by either free- or immobilized-cell systems even at a low dilution rate of 0.07 h-1. However, when the **hydrolyzate** was overlimed, it was fermentable by the immobilized cells at a dilution rate of 0.2 h-1.

ST Saccharomyces immobilized continuous ethanol fermn acid wood **hydrolyzate**

IT **Hydrolysis**
(acid; continuous cultivation of dilute-acid **hydrolyzates** to ethanol by immobilized Saccharomyces cerevisiae)

IT Wood
(chips, acid **hydrolyzate** from; continuous cultivation of dilute-acid **hydrolyzates** to ethanol by immobilized Saccharomyces cerevisiae)

IT Saccharomyces cerevisiae
(continuous cultivation of dilute-acid **hydrolyzates** to ethanol by immobilized Saccharomyces cerevisiae)

IT Fermentation
(continuous; continuous cultivation of dilute-acid **hydrolyzates** to ethanol by immobilized Saccharomyces cerevisiae)

IT Immobilization, molecular or cellular
(microbial cell; continuous cultivation of dilute-acid **hydrolyzates** to ethanol by immobilized Saccharomyces cerevisiae)

IT Stress, microbial
(toxic; continuous cultivation of dilute-acid **hydrolyzates** to ethanol by immobilized Saccharomyces cerevisiae)

IT 50-99-7, Dextrose, processes 58-86-6, D-Xylose, processes 59-23-4, D-Galactose, processes 3458-28-4, D-Mannose
RL: BCP (Biochemical process); FMU (Formation, unclassified); BIOL (Biological study); FORM (Formation, nonpreparative); PROC (Process)
(continuous cultivation of dilute-acid **hydrolyzates** to ethanol by immobilized Saccharomyces cerevisiae)

IT 64-17-5P, Ethanol, preparation
RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); BIOL (Biological study); **PREP (Preparation)**
(continuous cultivation of dilute-acid **hydrolyzates** to ethanol by immobilized Saccharomyces cerevisiae)

IT 14127-61-8, Ca2+, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(continuous cultivation of dilute-acid **hydrolyzates** to ethanol by immobilized Saccharomyces cerevisiae)

IT 9005-35-0, Calcium alginate
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(continuous cultivation of dilute-acid **hydrolyzates** to ethanol by immobilized Saccharomyces cerevisiae)

IT 56-81-5P, Glycerol, preparation 64-19-7P, Acetic acid, preparation 110-15-6P, Succinic acid, preparation 124-38-9P, **Carbon**

dioxide, preparation   127-17-3P, Pyruvic acid, preparation
RL: BYP (Byproduct); **PREP (Preparation)**
(continuous cultivation of dilute-acid **hydrolyzates** to ethanol by immobilized Saccharomyces cerevisiae)

IT   98-01-1, Furfural, formation (nonpreparative)   25376-49-2, Hydroxymethylfurfural
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
(continuous cultivation of dilute-acid **hydrolyzates** to ethanol by immobilized Saccharomyces cerevisiae)

L3   ANSWER 17 OF 98   CAPLUS   COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2001:713444 CAPLUS
DOCUMENT NUMBER: 135:257625
TITLE: Polyurethane foams prepared from polyisocyanate and various polyols
INVENTOR(S): Katoot, Mohammad W.; Katoot, Ahmed M.
PATENT ASSIGNEE(S): Kt Holdings, Llc, USA
SOURCE: PCT Int. Appl., 81 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001070842	A2	20010927	WO 2001-US8888	20010320 <--
WO 2001070842	A3	20020131		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2000-190642P   P   20000320

PI   WO 2001070842 A2 **20010927**

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001070842	A2	20010927	WO 2001-US8888	20010320 <--
	WO 2001070842	A3	20020131		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

AB   . . . the reaction product of a polyol selected from a fatty acid, a glycol, a vegetable oil, a mineral oil, a **carbohydrate**, a syrup, or a polyol blend comprising combination thereof with a polyisocyanate in the presence of a catalyst and atomic . . .

ST   polyurethane foam polyol polyisocyanate; fattyacid glycol

carbohydrate syrup polyol; vegetable oil fatty acid glycol **carbohydrate** syrup polyol; mineral oil fatty acid glycol **carbohydrate** syrup polyol

IT Syrups (sweetening agents)
(**hydrolyzed** starch, polymers with polyisocyanate; polyurethane foams prepared from polyisocyanate and various polyols)

IT Polyurethanes, preparation
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(polyurethane foams prepared from polyisocyanate and various polyols)

IT Plastic foams
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(polyurethane foams prepared from polyisocyanate and various polyols)

IT 67-66-3, Chloroform, uses 109-66-0, Pentane, uses 124-38-9, **Carbon dioxide**, uses 7732-18-5, Water, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(blowing agent; polyurethane foams prepared from polyisocyanate and various polyols)

IT 56-81-5D, Glycerol, polymers with polyisocyanate 57-50-1D, Sucrose, optionally aminified, polymers with polyisocyanate 63-42-3D, Lactose, polymers with polyisocyanate 101-68-8D, 4,4'-Diphenyl methane diisocyanate, polymers with polyol, a fatty acid, a mineral oil, a **carbohydrate**, or a combination thereof 107-21-1D, Ethylene Glycol, polymers with polyisocyanate 9003-01-4D, Polyacrylic acid, polymers with polyisocyanate 9004-32-4D, Carboxymethyl cellulose, polymers with polyisocyanate 9051-34-7, Polyethylene glycol dimethacrylate homopolymer 25249-16-5, 2-Hydroxyethylmethacrylate homopolymer 25265-71-8D, Dipropylene glycol, polymers with polyisocyanate 25322-68-3D, PEG 400, polymers with polyisocyanate 34012-52-7, Fumaric acid-maleic anhydride-phthalic anhydride-propylene glycol copolymer 57592-66-2, Pentaerythritol tetraacrylate homopolymer 75634-62-7, Niax L 5340 106392-12-5, Antarox 25R2 361484-11-9, Verimac 755-8590
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(polyurethane foams prepared from polyisocyanate and various polyols)

L3 ANSWER 18 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER:	2001:662075 CAPLUS
DOCUMENT NUMBER:	135:372061
TITLE:	Living anionic polymerizations of well-defined **sugar**-containing diblock fluorocopolymer and its application in CO2 emulsion polymerizations
AUTHOR(S):	Ye, Weijun; DeSimone, Joseph M.
CORPORATE SOURCE:	Department of Chemistry, University of North Carolina at Chapel Hill, Chapel Hill, NC, 27599-3290, USA
SOURCE:	Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (**2001**), 42(2), 340-341 CODEN: ACPPAY; ISSN: 0032-3934
PUBLISHER:	American Chemical Society, Division of Polymer Chemistry
DOCUMENT TYPE:	Journal; (computer optical disk)
LANGUAGE:	English
REFERENCE COUNT:	7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Living anionic polymerizations of well-defined **sugar**-containing diblock fluorocopolymer and its application in CO_2 emulsion polymerizations
SO Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (**2001**), 42(2), 340-341
CODEN: ACPPAY; ISSN: 0032-3934
AB Well-defined **sugar**-containing diblock copolymers of 3-O-methacryloyl-1,2:5,6-di-O-isopropylidene-α-D-glucofuranose (MAIpGlc) and 1,1-dihydroperfluorooctyl methacrylate (FOMA) have been prepared by sequential living anionic polymerization in THF atomic . .
predictable
mol. wts. and very narrow mol. distributions (MWD, Mw/Mn < 1.16). Removal of acetal protection groups from the protected **polysaccharide** block was carried out using 90 % trifluoroacetic acid at room temperature, yielding a hydrophilic block copolymer with pendant glucose. . .
ST glucofuranose methacryloyl isopropylidene living anionic polymn dihydroperfluorooctyl methacrylate; amphiphile glucofuranose fluoro polymethacrylate synthesis emulsion stabilization **carbon dioxide**; ethylacrylamide emulsion polymn **carbon dioxide** block glucofuranose fluoro polymethacrylate
IT Fluoropolymers, preparation
RL: PRP (Properties); SPN (Synthetic preparation); **PREP (Preparation)**
(block, emulsion stabilizer; preparation of well-defined **sugar** -containing diblock fluoro copolymer by living anionic polymns. and its application in CO_2 emulsion polymns.)
IT Amphiphiles
Emulsifying agents
(preparation of well-defined **sugar**-containing diblock fluoro copolymer by living anionic polymns. and its application in CO_2 emulsion polymns.)
IT 373593-92-1DP, **hydrolyzed** 731773-43-6DP, **hydrolyzed**
RL: NUU (Other use, unclassified); PRP (Properties); SPN (Synthetic preparation); **PREP (Preparation)**; USES (Uses)
(diblock, emulsion stabilizer; preparation of well-defined **sugar** -containing diblock fluoro copolymer by living anionic polymns. and its application in CO_2 emulsion polymns.)
IT 124-38-9, **Carbon dioxide**, uses
RL: NUU (Other use, unclassified); USES (Uses)
(emulsion polymerization medium; preparation of well-defined **sugar**
-containing
diblock fluoro copolymer by living anionic polymns. and its application in CO_2 emulsion polymns.)
IT 25215-59-2P, N-Ethylacrylamide homopolymer
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(preparation of well-defined **sugar**-containing diblock fluoro copolymer by living anionic polymns. and its application in CO_2 emulsion polymns.)

L3 ANSWER 19 OF 98 CAPLUS
ACCESSION NUMBER: 2001:536807 CAPLUS
DOCUMENT NUMBER: 135:287572
TITLE: Use of dynamic step response for control of fed-batch conversion of lignocellulosic **hydrolyzates** to ethanol
AUTHOR(S): Nilsson, A.; Taherzadeh, M. J.; Liden, G.
CORPORATE SOURCE: Department of Chemical Engineering II, Lund University

of Technology, Lund, SE-22100, Swed.
SOURCE: Journal of Biotechnology (**2001**), 89(1), 41-53
CODEN: JBITD4; ISSN: 0168-1656
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 135:287572
REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Use of dynamic step response for control of fed-batch conversion of lignocellulosic **hydrolyzates** to ethanol

SO Journal of Biotechnology (**2001**), 89(1), 41-53
CODEN: JBITD4; ISSN: 0168-1656

AB Optimization of fed-batch conversion of lignocellulosic **hydrolyzates** by the yeast Saccharomyces cerevisiae was studied. The feed rate was controlled using a step response strategy, in which the **carbon dioxide** evolution rate was used as input variable. The performance of the control strategy was examined using both an untreated and a detoxified dilute acid **hydrolyzate**, and the performance was compared to that obtained with a synthetic medium. In batch cultivation of the untreated **hydrolyzate**, only 23% of the hexose **sugars** were assimilated. However, by using the feed-back controlled fed-batch technique, it was possible to obtain complete conversion of the hexose **sugars**. Furthermore, the maximal specific ethanol productivity (qE,max) increased more than 10-fold, from 0.06 to 0.70 g g-1 h-1. In addition,. . . in batch cultivation, whereas a viability of more than 40% could be maintained during fed-batch cultivation. In contrast to untreated **hydrolyzate**, it was possible to convert the **sugars** in the detoxified **hydrolyzate** also in batch cultivation. However, a 50% higher specific ethanol productivity was obtained using fed-batch cultivation. During batch cultivation of both untreated and detoxified **hydrolyzate** a gradual decrease in specific ethanol productivity was observed This decrease could largely be avoided in fed-batch cultivations.

IT Process control
(computerized; use of dynamic step response for control of fed-batch conversion of lignocellulosic **hydrolyzates** to ethanol)

IT Fermentation
(ethanol; use of dynamic step response for control of fed-batch conversion of lignocellulosic **hydrolyzates** to ethanol)

IT Fermentation
(fed-batch; use of dynamic step response for control of fed-batch conversion of lignocellulosic **hydrolyzates** to ethanol)

IT Process control
(online; use of dynamic step response for control of fed-batch conversion of lignocellulosic **hydrolyzates** to ethanol)

IT Saccharomyces cerevisiae
Simulation and Modeling, biological
(use of dynamic step response for control of fed-batch conversion of lignocellulosic **hydrolyzates** to ethanol)

IT 11132-73-3, Lignocellulose
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(**hydrolyzate**; use of dynamic step response for control of fed-batch conversion of lignocellulosic **hydrolyzates** to

ethanol)

IT 64-19-7, Acetic acid, biological studies
RL: ADV (Adverse effect, including toxicity); BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence); PROC (Process)
(use of dynamic step response for control of fed-batch conversion of lignocellulosic **hydrolyzates** to ethanol)

IT 67-47-0, 5-Hydroxy-methylfurfural 98-01-1, Furfural, biological studies
RL: ADV (Adverse effect, including toxicity); BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(use of dynamic step response for control of fed-batch conversion of lignocellulosic **hydrolyzates** to ethanol)

IT 124-38-9, **Carbon dioxide**, biological studies
RL: ANT (Analyte); BSU (Biological study, unclassified); MFM (Metabolic formation); ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative)
(use of dynamic step response for control of fed-batch conversion of lignocellulosic **hydrolyzates** to ethanol)

IT 64-17-5P, Ethanol, preparation
RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); BIOL (Biological study); **PREP (Preparation)**
(use of dynamic step response for control of fed-batch conversion of lignocellulosic **hydrolyzates** to ethanol)

IT 50-99-7, D-Glucose, biological studies 58-86-6, D-Xylose, biological studies 59-23-4, D-Galactose, biological studies 3458-28-4, D-Mannose 5328-37-0, L-Arabinose
RL: BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence); PROC (Process)
(use of dynamic step response for control of fed-batch conversion of lignocellulosic **hydrolyzates** to ethanol)

L3 ANSWER 20 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER:	2001:445431 CAPLUS
DOCUMENT NUMBER:	135:179742
TITLE:	Development and modeling of a continuous simulated moving bed ion exclusion process for the separation of acid and **sugar**
AUTHOR(S):	Springfield, R. M.; Hester, R. D.
CORPORATE SOURCE:	Mississippi Polymer Technologies, Bay Saint Louis, MS, 39520, USA
SOURCE:	Separation Science and Technology (**2001**), 36(5 & 6), 911-930 CODEN: SSTEDS; ISSN: 0149-6395
PUBLISHER:	Marcel Dekker, Inc.
DOCUMENT TYPE:	Journal
LANGUAGE:	English
REFERENCE COUNT:	18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Development and modeling of a continuous simulated moving bed ion exclusion process for the separation of acid and **sugar**

SO Separation Science and Technology (**2001**), 36(5 & 6), 911-930
CODEN: SSTEDS; ISSN: 0149-6395

AB The emission of large quantities of the greenhouse gas **carbon dioxide** into the atmospheric, as well as our increasing dependence on foreign oil supplies and the need to stimulate the lagging farm economy,

has prompted research in the production of renewable liquid fuels from lignocellulosic materials. Acid **hydrolysis** of the cellulosic fraction of these materials into **sugars** that can be fermented to ethanol is one option. In support of this approach, a simulated moving bed ion exclusion chromatog. system was constructed for the continuous separation of the product **sugars** from the acid used to effect **hydrolysis.** A numerical simulation model of the process is presented here. Our system consisted of 4 zones of 18 resin-packed columns,. . .

ST simulated moving bed system model sepn acid **sugar**

IT **Hydrolysis**
(acid; development and modeling of a continuous simulated moving bed ion exclusion process for the separation of acid and **sugar**)

IT Ion exclusion chromatography
Separation
Simulation and Modeling, physicochemical
(development and modeling of a continuous simulated moving bed ion exclusion process for the separation of acid and **sugar**)

IT Hexoses
Pentoses
RL: BPR (Biological process); BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); PROC (Process)
(development and modeling of a continuous simulated moving bed ion exclusion process for the separation of acid and **sugar**)

IT Fermentation
(ethanol; development and modeling of a continuous simulated moving bed ion exclusion process for the separation of acid and **sugar**)

IT Reactors
(moving-bed, simulated; development and modeling of a continuous simulated moving bed ion exclusion process for the separation of acid and **sugar**)

IT 64-17-5P, ethanol, preparation
RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); BIOL (Biological study); **PREP (Preparation)**
(development and modeling of a continuous simulated moving bed ion exclusion process for the separation of acid and **sugar**)

IT 11132-73-3, Lignocellulose
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(development and modeling of a continuous simulated moving bed ion exclusion process for the separation of acid and **sugar**)

IT 9004-34-6, Cellulose, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); RCT (Reactant); BIOL (Biological study); PROC (Process); RACT (Reactant or reagent)
(development and modeling of a continuous simulated moving bed ion exclusion process for the separation of acid and **sugar**)

IT 7664-93-9, sulfuric acid, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(development and modeling of a continuous simulated moving bed ion exclusion process for the separation of acid and **sugar**)

IT 9005-53-2, Lignin, processes
RL: REM (Removal or disposal); PROC (Process)
(development and modeling of a continuous simulated moving bed ion exclusion process for the separation of acid and **sugar**)

L3 ANSWER 21 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2001:437290 CAPLUS
DOCUMENT NUMBER: 135:179772
TITLE: Kinetic analysis of growth and xanthan gum production with Xanthomonas campestris on sucrose, using sequentially consumed nitrogen sources
AUTHOR(S): Letisse, Fabien; Chevallereau, Paule; Simon, Jean-Luc; Lindley, Nic D.
CORPORATE SOURCE: Laboratoire des Recherches Techniques, Rhodia Food, Melle, 79500, Fr.
SOURCE: Applied Microbiology and Biotechnology (**2001**), 55(4), 417-422
CODEN: AMBIDG; ISSN: 0175-7598
PUBLISHER: Springer-Verlag
DOCUMENT TYPE: Journal
LANGUAGE: English
REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT
SO Applied Microbiology and Biotechnology (**2001**), 55(4), 417-422
CODEN: AMBIDG; ISSN: 0175-7598
AB . . . established in which all essential medium components are supplied at the onset. This has been achieved using sucrose as sole **sugar** feedstock. Sequential consumption of nitrogen sources (soybean **hydrolyzates**, ammonium and nitrate salts) was observed to facilitate the further optimization of the medium. Biomass accumulation was limited by phosphate availability. Xanthan yields of more than 60% (grams of xanthan per g of **sugar**) have been obtained with constant acetyl content. However, pyruvyl substitution decreased as the growth rate declined, due to the metabolic. . .
IT Protein **hydrolyzates**
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(soya, **hydrolyzate**; kinetic anal. of growth and xanthan gum production with Xanthomonas campestris on sucrose, using sequentially consumed nitrogen sources)
IT 11138-66-2P, Xanthan gum
RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); BIOL (Biological study); **PREP (Preparation)**
(kinetic anal. of growth and xanthan gum production with Xanthomonas campestris on sucrose, using sequentially consumed nitrogen sources)
IT 124-38-9, **Carbon dioxide**, biological studies
RL: BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative)
(kinetic anal. of growth and xanthan gum production with Xanthomonas campestris on sucrose, using sequentially consumed nitrogen sources)

L3 ANSWER 22 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2001:372586 CAPLUS
DOCUMENT NUMBER: 135:137637
TITLE: Synthesis of functionalized enantiopure steroids from estrone and cholestanone through organolithium intermediates
AUTHOR(S): Yus, M.; Soler, T.; Foubelo, F.
CORPORATE SOURCE: Facultad de Ciencias, Departamento de Quimica Organica, Universidad de Alicante, Alicante, 03080, Spain
SOURCE: Tetrahedron: Asymmetry (**2001**), 12(5),

801-810
CODEN: TASYE3; ISSN: 0957-4166
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 135:137637
REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT
SO Tetrahedron: Asymmetry (**2001**), 12(5), 801-810
CODEN: TASYE3; ISSN: 0957-4166
AB . . . these intermediates with different electrophiles [E = H2O, D2O, PhCHO, Me2CO, Et2CO, (CH2)5CO, CO2] at -78 to 20°C afforded, after **hydrolysis** with water, enantiomerically pure derivs. (I) and (II), resp. When protected ketones derived from D-glucose and D-fructose were used as the electrophile, the reaction gave the expected mixed products which consist of a steroid and a **carbohydrate** fragment. The reaction of O-protected estrone as the electrophilic component and intermediate afforded the C2-sym. steroid dimer. The stereochem. of. . .

IT 53-16-7, Estrone, reactions 67-64-1, Acetone, reactions 96-22-0, 3-Pentanone 100-52-7, Benzaldehyde, reactions 108-94-1, Cyclohexanone, reactions 124-38-9, **Carbon dioxide**, reactions
493-05-0 496-14-0 566-88-1 2847-00-9 18422-53-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(synthesis of functionalized enantiopure steroids from estrone and cholestanone through organolithium intermediates)

IT 18744-05-3P 290294-89-2P 352196-19-1P 352196-20-4P 352196-29-3P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(synthesis of functionalized enantiopure steroids from estrone and cholestanone through organolithium intermediates)

IT 1251-59-8P 290294-90-5P 290294-91-6P 290294-92-7P 290294-94-9P
290294-95-0P 290294-96-1P 290294-97-2P 290294-98-3P 352196-21-5P
352196-22-6P 352196-23-7P 352196-24-8P 352196-25-9P 352196-26-0P
352196-27-1P 352196-28-2P 352196-30-6P 352196-31-7P 352196-32-8P
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(synthesis of functionalized enantiopure steroids from estrone and cholestanone through organolithium intermediates)

ACCESSION NUMBER: 2000:762481 CAPLUS
DOCUMENT NUMBER: 134:42498
TITLE: Synthesis of **sugar**-containing amphiphiles for liquid and supercritical **carbon dioxide**
AUTHOR(S): Ye, Weijun; DeSimone, Joseph M.
CORPORATE SOURCE: Department of Chemistry, University of North Carolina at Chapel Hill, Chapel Hill, NC, 27599-3290, USA
SOURCE: Industrial & Engineering Chemistry Research (**2000**), 39(12), 4564-4566
CODEN: IECRED; ISSN: 0888-5885
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT
TI Synthesis of **sugar**-containing amphiphiles for liquid and

supercritical **carbon** **dioxide**
SO Industrial & Engineering Chemistry Research (**2000**), 39(12), 4564-4566
CODEN: IECRED; ISSN: 0888-5885
AB Liquid and/or supercrit. **carbon** **dioxide** as a useful processing fluid is limited by its inability to solubilize highly polar compds. This problem can be alleviated. . . primary objective herein is to design and synthesize novel materials that have both strong polar moieties and highly CO2-philic segments. **Sugar**-containing hydrophobic/hydrophilic fluorinated methacrylate copolymers were synthesized by free-radical polymerization for this purpose. The degree of solubility of the amphiphiles in CO2 was found to be heavily influenced by the amphiphilic structure, including the polarity of the **sugar** head (acetal protected and deprotected), and the fraction of CO2-philic groups. We also found that the presence of water in. . .
ST acrylic fluoropolymer **sugar** deriv prepn; polymethacrylate dispersant supercrit **carbon** **dioxide** polymn; hydroxyethyl methacrylate dispersion polymn **carbon** **dioxide**
IT Polymerization
(dispersion; of hydroxyethyl methacrylate in **carbon** **dioxide**)
IT Polymer morphology
(of submicron particles prepared by dispersion polymerization in **carbon** **dioxide**)
IT Microparticles
(preparation by dispersion polymerization in **carbon** **dioxide**)
IT Fluoropolymers, preparation
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); **PREP** **(Preparation)**; USES (Uses)
(preparation of **sugar**-containing amphiphiles for liquid and supercrit. **carbon** **dioxide**)
IT 25249-16-5P, 2-Hydroxyethyl methacrylate homopolymer
RL: SPN (Synthetic preparation); **PREP** **(Preparation)**
(preparation of submicron particles by dispersion polymerization in **carbon** **dioxide**)
IT 124-38-9, **Carbon** **dioxide**, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(preparation of **sugar**-containing amphiphiles for liquid and supercrit.)
IT 313228-57-8P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); TEM (Technical or engineered material use); **PREP** **(Preparation)**; RACT (Reactant or reagent); USES (Uses)
(preparation of **sugar**-containing amphiphiles for liquid and supercrit. **carbon** **dioxide**)
IT 313228-57-8DP, **hydrolyzed**
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); **PREP** **(Preparation)**; USES (Uses)
(preparation of **sugar**-containing amphiphiles for liquid and supercrit. **carbon** **dioxide**)

L3 ANSWER 24 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2000:35232 CAPLUS
DOCUMENT NUMBER: 132:51377
TITLE: Preparation of xylose by using equipment of **sugar** factory

INVENTOR(S): Yu, Shijin
PATENT ASSIGNEE(S): Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 4 pp.
CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1152616	A	19970625	CN 1995-121301	19951219 <--
CN 1054883	B	20000726		
PRIORITY APPLN. INFO.:			CN 1995-121301	19951219

TI Preparation of xylose by using equipment of **sugar** factory
PI CN 1152616 A **19970625**

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI CN 1152616	A	19970625	CN 1995-121301	19951219 <--
CN 1054883	B	20000726		

AB The process comprises neutralizing **hydrolyzed** solution with active $CaCO_3$ emulsion and lime-kiln gas (**carbon dioxide**) to pH 3.0, heating to 80°, adding lime water to pH 9.0 while being saturated with lime-kiln gas, filtering, fuming. . .
ST xylose purifn prepn **sugar** factory
IT Anion exchangers
Cation exchangers
(preparation of xylose by using equipment of **sugar** factory)
IT Lime (chemical)
RL: NUU (Other use, unclassified); USES (Uses)
(preparation of xylose by using equipment of **sugar** factory)
IT 58-86-6P, Xylose, preparation
RL: IMF (Industrial manufacture); PUR (Purification or recovery); **PREP (Preparation)**
(preparation of xylose by using equipment of **sugar** factory)
IT 124-38-9, **Carbon dioxide**, uses 471-34-1, Calcium carbonate ($CaCO_3$), uses 7446-09-5, Sulfur dioxide, uses
RL: NUU (Other use, unclassified); USES (Uses)
(preparation of xylose by using equipment of **sugar** factory)
IT 114540-44-2, D 296 133405-09-1, 001x7
RL: TEM (Technical or engineered material use); USES (Uses)
(preparation of xylose by using equipment of **sugar** factory)

L3 ANSWER 25 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1999:172642 CAPLUS
DOCUMENT NUMBER: 130:211007
TITLE: Method of preparing crystalline L-arabinose by extraction of **sugar** beet pulp
INVENTOR(S): Antila, Juhani; Ravanko, Vili; Walliander, Pertti
PATENT ASSIGNEE(S): Cultor Corporation, Finland
SOURCE: PCT Int. Appl., 13 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9910542	A1	19990304	WO 1998-FI667	19980826 <--

W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW

RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FI 9703501	A	19990227	FI 1997-3501	19970826 <--
FI 105691	B1	20000929		
FI 9800119	A	19990227	FI 1998-119	19980120 <--
FI 104500	B1	20000215		
CA 2301220	A1	19990304	CA 1998-2301220	19980826 <--
AU 9889815	A	19990316	AU 1998-89815	19980826 <--
EP 1012349	A1	20000628	EP 1998-941444	19980826 <--
EP 1012349	B1	20040630		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001514018	T	20010911	JP 2000-507847	19980826 <--
AT 270346	T	20040715	AT 1998-941444	19980826
ES 2223136	T3	20050216	ES 1998-941444	19980826
US 6506897	B1	20030114	US 2000-486437	20001030 <--

PRIORITY APPLN. INFO.:

FI 1997-3501	A	19970826
FI 1998-119	A	19980120
WO 1998-FI667	W	19980826

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Method of preparing crystalline L-arabinose by extraction of **sugar** beet pulp

PI WO 9910542 A1 **19990304**

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9910542	A1	19990304	WO 1998-FI667	19980826 <--

W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW

RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FI 9703501	A	19990227	FI 1997-3501	19970826 <--
FI 105691	B1	20000929		
FI 9800119	A	19990227	FI 1998-119	19980120 <--
FI 104500	B1	20000215		
CA 2301220	A1	19990304	CA 1998-2301220	19980826 <--
AU 9889815	A	19990316	AU 1998-89815	19980826 <--
EP 1012349	A1	20000628	EP 1998-941444	19980826 <--
EP 1012349	B1	20040630		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001514018	T	20010911	JP 2000-507847	19980826 <--
AT 270346	T	20040715	AT 1998-941444	19980826
ES 2223136	T3	20050216	ES 1998-941444	19980826

US 6506897 B1 20030114 US 2000-486437 20001030 <--

AB The method comprises extraction of **sugar** beet pulp, from which **sugar** has been extracted, in a strong alkaline solution; **hydrolysis** of the obtained crude araban with a strong acid at an elevated temperature; neutralization and filtration of the obtained solution;. . .

ST arabinose purifn cation anion exchanger; **hydrolysis** araban arabinose prepn

IT Anion exchangers
Cation exchangers
Extraction
Hydrolysis
(preparation of crystalline L-arabinose by extraction of **sugar** beet pulp)

IT **Sugar** beet
(pulp; preparation of crystalline L-arabinose by extraction of **sugar** beet pulp)

IT 124-38-9, **Carbon dioxide**, reactions 7664-93-9, Sulfuric acid, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(for neutralization; preparation of crystalline L-arabinose by extraction of **sugar** beet pulp)

IT 5328-37-0P, L-Arabinose
RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); **PREP (Preparation)**; PROC (Process)
(preparation of crystalline L-arabinose by extraction of **sugar** beet pulp)

IT 9060-75-7P, L-Arabinan
RL: IMF (Industrial manufacture); RCT (Reactant); **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation of crystalline L-arabinose by extraction of **sugar** beet pulp)

IT 1305-62-0, Calcium hydroxide, uses
RL: NUU (Other use, unclassified); USES (Uses)
(suspension; preparation of crystalline L-arabinose by extraction of **sugar** beet pulp)

L3 ANSWER 26 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER:	1999:150338 CAPLUS
DOCUMENT NUMBER:	130:297016
TITLE:	New synthetic approaches to aminosugar-containing polymers
AUTHOR(S):	Kadokawa, Jun-Ichi; Tagaya, Hideyuki; Chiba, Koji
CORPORATE SOURCE:	Department of Materials Science and Engineering, Faculty of Engineering, Yamagata University, Yamagata, 992, Japan
SOURCE:	Recent Research Developments in Macromolecules Research (**1998**), 3(Pt. 1), 67-75 CODEN: RRMRFG
PUBLISHER:	Research Signpost
DOCUMENT TYPE:	Journal; General Review
LANGUAGE:	English
REFERENCE COUNT:	30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

SO Recent Research Developments in Macromolecules Research (**1998**), 3(Pt. 1), 67-75
CODEN: RRMRFG

AB . . . chain. The second topic concerns synthesis and block copolymn. of hydroxy-terminated oligochitin. Hydroxy-terminated oligochitin was prepared by a selective acid **hydrolysis** of fully protected chitin. Furthermore, block copolymn. of the product oligochitin with the other

hydroxy-terminated oligomers using a diisocyanate compound. . .
ST review amino deriv **sugar** polyester polyurethane prepn; hydroxy terminated oligochitin block polymn review
IT Polymerization
(polymerization of glucosamine derivs. with **carbon dioxide** and by regioselective polycondensation)
IT Polyamides, preparation
Polyureas
Polyurethanes, preparation
RL: PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); **PREP (Preparation)**; PROC (Process)
(polymerization of glucosamine derivs. with **carbon dioxide** and by regioselective polycondensation)
IT 1398-61-4DP, Chitin, hydroxy derivs., polymers
RL: PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); **PREP (Preparation)**; PROC (Process)
(oligomeric; polymerization of glucosamine derivs. and of hydroxy-terminated oligochitin)
IT 3416-24-8DP, D-Glucosamine, derivs., polymers
RL: PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); **PREP (Preparation)**; PROC (Process)
(polymerization of glucosamine derivs. with **carbon dioxide** and by regioselective polycondensation)

L3 ANSWER 27 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1999:90426 CAPLUS
DOCUMENT NUMBER: 130:140746
TITLE: Derivatized **polysaccharides** and preparation thereof in a densified fluid
INVENTOR(S): Harris, Rosemarie; Jureller, Sharon H.; Kerschner, Judith L.; Trzasko, Peter T.; Humphreys, Robert W. R.
PATENT ASSIGNEE(S): National Starch and Chemical Investment Holding Corporation, USA
SOURCE: Eur. Pat. Appl., 19 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE	
EP 893451	A2	19990127	EP 1998-113012		19980713	<--
EP 893451	A3	19990331				
EP 893451	B1	20050302				
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO						
US 5977348	A	19991102	US 1997-900753		19970725	<--
AU 9876133	A	19990204	AU 1998-76133		19980713	<--
AU 742783	B2	20020110				
ES 2239371	T3	20050916	ES 1998-113012		19980713	
CA 2243203	A1	19990125	CA 1998-2243203		19980714	<--
JP 11092501	A	19990406	JP 1998-209341		19980724	<--
PRIORITY APPLN. INFO.:			US 1997-900753	A	19970725	

OTHER SOURCE(S): MARPAT 130:140746
TI Derivatized **polysaccharides** and preparation thereof in a densified fluid

PI EP 893451 A2 **19990127**

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 893451	A2	19990127	EP 1998-113012	19980713 <--
EP 893451	A3	19990331		
EP 893451	B1	20050302		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
US 5977348	A	19991102	US 1997-900753	19970725 <--
AU 9876133	A	19990204	AU 1998-76133	19980713 <--
AU 742783	B2	20020110		
ES 2239371	T3	20050916	ES 1998-113012	19980713
CA 2243203	A1	19990125	CA 1998-2243203	19980714 <--
JP 11092501	A	19990406	JP 1998-209341	19980724 <--

AB **Polysaccharides** are chemical modified, especially esterified or etherified, in a densified fluid, especially in supercrit. **carbon dioxide.** The process allows for a high degree of substitution without the use of organic solvents or repeated reactions, and unreacted reagents and byproducts are separated easily since the **polysaccharide** is insol. in the densified fluid. Thus, Hylon VII starch (GPC mol. weight 1.2 million) was esterified with acetic anhydride in densified **carbon dioxide** using sodium acetate catalyst at 115° and 4000 psi for 2.5 h, giving 2.47% substitution and mol. weight 2,444,000.

ST **polysaccharide** modification densified **carbon dioxide**; starch hydroxypropyl ether acetate prepn; acetic anhydride esterification starch; sodium acetate esterification catalyst starch

IT Bronsted acids
Hydroxides (inorganic)
Lewis acids
Lewis bases
RL: CAT (Catalyst use); USES (Uses)
(catalysts; derivatized **polysaccharides** and preparation thereof in a densified fluid)

IT Esterification catalysts
(derivatized **polysaccharides** and preparation thereof in a densified fluid)

IT **Polysaccharides**, processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(derivatized **polysaccharides** and preparation thereof in a densified fluid)

IT Carboxylic acids, uses
RL: CAT (Catalyst use); USES (Uses)
(salts, catalysts; derivatized **polysaccharides** and preparation thereof in a densified fluid)

IT Amines, uses
RL: CAT (Catalyst use); USES (Uses)
(tertiary, catalysts; derivatized **polysaccharides** and preparation thereof in a densified fluid)

IT 9045-28-7P, Starch acetate 39433-68-6P, Starch propionate 54386-22-0P, 2-Hydroxypropyl starch acetate 62931-09-3P, Guar gum acetate 100842-94-2P, Maltodextrin acetate 220039-92-9P, 2-Hydroxypropyl starch octenylsuccinate 220039-94-1P, 2-Hydroxypropyl starch octanoate 220039-96-3P, 2-Hydroxypropyl starch trifluoroacetate
RL: IMF (Industrial manufacture); **PREP (Preparation)**
(derivatized **polysaccharides** and preparation thereof in a

densified fluid)
IT 104-15-4, uses
RL: CAT (Catalyst use); USES (Uses)
(esterification and **hydrolysis** catalyst; derivatized **polysaccharides** and preparation thereof in a densified fluid)
IT 121-44-8, uses 121-69-7, N,N-Dimethylaniline, uses 127-08-2, Potassium acetate 127-09-3 926-64-7, Dimethylaminoacetonitrile 1122-58-3, 4-(Dimethylamino)pyridine 1310-65-2, Lithium hydroxide 1310-73-2, Sodium hydroxide, uses 2923-18-4, Sodium trifluoroacetate 5683-33-0, 2-(Dimethylamino)pyridine 19437-26-4, Di-2-pyridylketone 43018-61-7, 5-Dimethylamino-2-pentanone 220035-23-4
RL: CAT (Catalyst use); USES (Uses)
(esterification catalyst; derivatized **polysaccharides** and preparation thereof in a densified fluid)
IT 124-38-9, **Carbon dioxide**, uses
RL: NUU (Other use, unclassified); USES (Uses)
(supercrit.; derivatized **polysaccharides** and preparation thereof in a densified fluid)

L3 ANSWER 28 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1998:781775 CAPLUS
DOCUMENT NUMBER: 130:54741
TITLE: Process, cost modeling and simulations for integrated project development of biomass for fuel and protein
AUTHOR(S): Selvam, P. V. Pannir; Wolff, D. M. B.; Melo, H. N. Souza
CORPORATE SOURCE: Programa de Pos-Graduacao em Engenharia Quimica Centro de Tecnologia, Universidade Federal do Rio Grande do Norte, Natal, Brazil
SOURCE: Journal of Scientific & Industrial Research (**1998**), 57(10 & 11), 567-574
CODEN: JSIRAC; ISSN: 0022-4456
PUBLISHER: National Institute of Science Communication, CSIR
DOCUMENT TYPE: Journal
LANGUAGE: English
REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT
SO Journal of Scientific & Industrial Research (**1998**), 57(10 & 11), 567-574
CODEN: JSIRAC; ISSN: 0022-4456
AB . . . The preliminary anal. of cost and investments of biomass utilization projects which are included for this study are: steam, ammonia, **carbon dioxide** and alkali pretreatment process, methane gas production using anaerobic digestion process, aerobic composting, ethanol fermentation and distillation, effluent treatments using.
. .
cogeneration of energy for drying. The main project under developments are the biomass valuation projects with the elephant (Napier) grass, **sugar** cane bagasse and microalgae, using models for mass balance, equipment and production cost. The sensibility analyses are carried out to.
. .
ST fuel protein biomass project development; biomass **hydrolysis** fermn alc protein; ethanol protein biomass **hydrolysis** fermn
IT **Hydrolysis**
(autohydrolysis; process, economics and simulation for integrated project development of biomass for fuel and protein)
IT **Hydrolysis**

(base; process, economics and simulation for integrated project development of biomass for fuel and protein)

IT **Hydrolysis**
(enzymic; process, economics and simulation for integrated project development of biomass for fuel and protein)

IT Proteins, general, preparation
RL: IMF (Industrial manufacture); **PREP (Preparation)**
(process, economics and simulation for integrated project development of biomass for fuel and protein)

IT 64-17-5P, Ethanol, preparation 74-82-8P, Methane, preparation
RL: IMF (Industrial manufacture); **PREP (Preparation)**
(process, economics and simulation for integrated project development of biomass for fuel and protein)

IT 124-38-9, **Carbon dioxide**, uses 7664-41-7, Ammonia, uses
RL: NUU (Other use, unclassified); USES (Uses)
(process, economics and simulation for integrated project development of biomass for fuel and protein)

L3 ANSWER 29 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1998:686627 CAPLUS
DOCUMENT NUMBER: 129:342742
TITLE: Pretreatment for cellulose **hydrolysis** by **carbon dioxide** explosion
AUTHOR(S): Zheng, Yizhou; Lin, H.-M.; Tsao, George T.
CORPORATE SOURCE: Laboratory of Renewable Resources Engineering, Purdue University, West Lafayette, IN, 47906, USA
SOURCE: Biotechnology Progress (**1998**), 14(6), 890-896
CODEN: BIPRET; ISSN: 8756-7938
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Pretreatment for cellulose **hydrolysis** by **carbon dioxide** explosion

SO Biotechnology Progress (**1998**), 14(6), 890-896
CODEN: BIPRET; ISSN: 8756-7938

AB Cellulosic materials were treated with supercrit. **carbon dioxide** to increase the reactivity of cellulose, thereby to enhance the rate and the extent of cellulose **hydrolysis.** In this pretreatment process, the cellulosic materials such as Avicel, recycled paper mix, sugarcane bagasse and the repulping waste of recycled paper are placed in a reactor under pressurized **carbon dioxide** at 35°C for a controlled time period. Upon an explosive release of the **carbon dioxide** pressure, the disruption of the cellulosic structure increases the accessible surface area of the cellulosic substrate to enzymic **hydrolysis.** Results indicate that supercrit. **carbon dioxide** is effective for pretreatment of cellulose. An increase in pressure facilitates the faster penetration of **carbon dioxide** mols. into the crystalline structures, thus more glucose is produced from cellulosic materials after the explosion as compared to those without the pretreatment. This explosion pretreatment enhances the rate of cellulosic material **hydrolysis** as well as increases glucose yield by as much as 50%. Results from the simultaneous saccharification and fermentation tests also. .

. in the available carbon source from the cellulosic materials for fermentation
to produce ethanol. As an alternative method, this supercrit.
carbon dioxide explosion has a possibility to reduce
expense compared with ammonia explosion, and since it is operated at the
low temperature, it will not cause degradation of **sugars** such as those
treated with steam explosion due to the high-temperature involved.

ST cellulose **hydrolysis** supercrit **carbon dioxide**
explosion

IT Solid wastes
(cellulosic; pretreatment for Cellulose **Hydrolysis** by
Carbon Dioxide Explosion)

IT Saccharification
(enzymic; pretreatment for Cellulose **Hydrolysis** by
Carbon Dioxide Explosion)

IT Bagasse
(pretreatment for Cellulose **Hydrolysis** by **Carbon**
Dioxide Explosion)

IT Paper
(recycled; pretreatment for Cellulose **Hydrolysis** by
Carbon Dioxide Explosion)

IT 64-17-5P, Ethanol, preparation
RL: BMF (Bioindustrial manufacture); BIOL (Biological study); **PREP**
(Preparation)
(fermentation; pretreatment for Cellulose **Hydrolysis** by
Carbon Dioxide Explosion)

IT 9004-34-6, Avicel, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL
(Biological study); PROC (Process)
(pretreatment for Cellulose **Hydrolysis** by **Carbon**
Dioxide Explosion)

IT 124-38-9, **Carbon dioxide**, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES
(Uses)
(pretreatment for Cellulose **Hydrolysis** by **Carbon**
Dioxide Explosion)

L3 ANSWER 30 OF 98 CAPLUS

ACCESSION NUMBER: 1998:338926 CAPLUS
DOCUMENT NUMBER: 129:6472
TITLE: Effects of PCO2 on substrate compositions in anaerobic digestion
AUTHOR(S): Kim, Young-Chur; Lee, Mu-kang
CORPORATE SOURCE: Dep. Environ. Eng., Kyung-Sung Univ., S. Korea
SOURCE: Hwahak Konghak (**1998**), 36(1), 78-84
CODEN: HHKHAT; ISSN: 0304-128X
PUBLISHER: Korean Institute of Chemical Engineers
DOCUMENT TYPE: Journal
LANGUAGE: Korean

SO Hwahak Konghak (**1998**), 36(1), 78-84
CODEN: HHKHAT; ISSN: 0304-128X

AB Effects of **carbon dioxide** partial pressure (PCO2) and
substrate compns. on the bacterial population, methane production rate and
matter degradation in anaerobic digestion were. . . by using anaerobic
chemostat type reactors at 35±1°, at the HRT of 7 days. Two
kinds of single substrate containing **carbohydrate** and protein, and
mixture of these were used in this study. At PCO2, of 0.5 atm, the specific

methane production. . . rates at the protein substrate reactor. At PCO2 of 0.5 atm, the methane production rates in the reactors fed by **carbohydrate**, protein and mixed substrate were 20%, 29% and 26% higher than those obtained under the controlled condition, resp. The number. . . increased as PCO2 increased from 0.1 to 0.6 atm, however, decreased slightly at PCO2 above 0.7 atmospheric The number of **hydrolytic** bacteria, sulfate-reducing bacteria and H2-producing acetogenic bacteria were not much increased significantly when PCO2 exceeded 0.7 atmospheric It was considered. . .

ST biogas prodn anaerobic digestion substrate compn; **carbon dioxide** effect methane anaerobic digestion

IT **Carbohydrates**, biological studies
Proteins, general, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(effects of CO2 partial pressure on substrate compns. in anaerobic digestion)

IT 74-82-8P, Methane, preparation
RL: BMF (Bioindustrial manufacture); BIOL (Biological study); **PREP (Preparation)**
(effects of CO2 partial pressure on substrate compns. in anaerobic digestion)

IT 124-38-9, **Carbon dioxide**, processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(effects of CO2 partial pressure on substrate compns. in anaerobic digestion)

L3 ANSWER 31 OF 98 CAPLUS

ACCESSION NUMBER:	1998:163169 CAPLUS
DOCUMENT NUMBER:	128:242954
TITLE:	Fermentation of galacturonic acid and pectin-rich materials to ethanol by genetically modified strains of Erwinia
AUTHOR(S):	Grohmann, Karel; Manthey, John A.; Cameron, Randall G.; Buslig, Bela S.
CORPORATE SOURCE:	USDA, ARS, SAA, Citrus and Subtropical Products Research Laboratory, Winter Haven, FL, 33883-1909, USA
SOURCE:	Biotechnology Letters (**1998**), 20(2), 195-200 CODEN: BILED3; ISSN: 0141-5492
PUBLISHER:	Chapman & Hall
DOCUMENT TYPE:	Journal
LANGUAGE:	English
REFERENCE COUNT:	16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

SO Biotechnology Letters (**1998**), 20(2), 195-200
CODEN: BILED3; ISSN: 0141-5492

AB . . . . genus Erwinia indicates that two strains, E. chrysanthemi EC16 and E. carotovora SR38, show promise for the development of direct **hydrolysis** and fermentation of pectin-rich substrates to mixts. of ethanol and acetate. Both strains fermented glucose to ethanol in nearly theor.. . . yields, but produced mainly acetate and ethanol by fermentation of D-galacturonic acid. Both strains depolymd. citrus pectin, polygalacturonic acid and **polysaccharides** in citrus peel and converted the resulting **sugars** to **carbon dioxide**, acetate, ethanol and lesser amts. of formate and succinate.

IT **Polysaccharides**, biological studies

RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(fermentation of **polysaccharides** of Citrus to ethanol by genetically modified Erwinia)

IT 64-17-5P, Ethanol, preparation
RL: BMF (Bioindustrial manufacture); BIOL (Biological study); **PREP (Preparation)**
(fermentation; fermentation of polygalacturonic acid and pectin-rich materials to ethanol by genetically modified Erwinia)

IT 64-17-5P, Ethanol, preparation
RL: BMF (Bioindustrial manufacture); BIOL (Biological study); **PREP (Preparation)**
(fermentation of polygalacturonic acid and pectin-rich materials to ethanol by genetically modified Erwinia)

L3 ANSWER 32 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1998:84757 CAPLUS
DOCUMENT NUMBER: 128:117234
TITLE: Catalytic steam reforming of biomass-derived fractions from pyrolysis processes
AUTHOR(S): Czernik, S.; Wang, D.; Montane, D.; Chornet, E.
CORPORATE SOURCE: National Renewable Energy Laboratory, Golden, CO, USA
SOURCE: Developments in Thermochemical Biomass Conversion (**1997**), Volume 1, 672-686. Editor(s): Bridgwater, A. V.; Boocock, Dave G. B. Blackie: London, UK.
CODEN: 65OTAY
DOCUMENT TYPE: Conference
LANGUAGE: English
REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

SO Developments in Thermochemical Biomass Conversion (**1997**), Volume 1, 672-686. Editor(s): Bridgwater, A. V.; Boocock, Dave G. B. Publisher: Blackie, London, UK.
CODEN: 65OTAY

AB Biomass conversion via **hydrolytic**, solvolytic, and pyrolytic processes generates liquid streams that, after separation of marketable products,
can be used to produce either syngas. . . where thermal cracking competes with catalytic processes. Bench-scale, fixed bed reactor tests demonstrated high hydrogen yields from model compds. and **carbohydrate**-derived pyrolysis oil fractions. Reforming bio-oil or its fractions required proper dispersion of the liquid to avoid vapor-phase carbonization of the. . . assessment showed that the process could be economically viable if the lignin-derived oil fraction was sold for adhesives and only **carbohydrate**-derived fraction was converted to hydrogen.

IT 74-82-8P, Methane, preparation 124-38-9P, **Carbon dioxide**, preparation 630-08-0P, Carbon monoxide, preparation 1333-74-0P, Hydrogen, preparation
RL: PNU (Preparation, unclassified); **PREP (Preparation)**
(catalytic steam reforming of poplar pyrolysis oil and its fractions)

IT 91-10-1P, Syringol
RL: PNU (Preparation, unclassified); **PREP (Preparation)**
(model compound; catalytic steam reforming of poplar pyrolysis oil and its fractions)

L3 ANSWER 33 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1998:38402 CAPLUS
DOCUMENT NUMBER: 128:127145
TITLE: Enzyme catalyzed method for producing monocarboxylic acid esters of mono-, di-, or oligosaccharides
INVENTOR(S): Schneider, Manfred; Haase, Bernhard; Machmueller, Guido
PATENT ASSIGNEE(S): Huels A.-G., Germany
SOURCE: Ger. Offen., 4 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
DE 19626943	A1	19980108	DE 1996-19626943	19960704	<--
PRIORITY APPLN. INFO.:			DE 1996-19626943	19960704	

PI DE 19626943 A1 **19980108**

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI DE 19626943	A1	19980108	DE 1996-19626943	19960704	<--

AB . . . and rape oil alkyl esters are incubated with lipase in the presence of mono-, di- or oligosaccharides, starch, cellulose, methylcellulose **hydrolyzates**, cyclodextrin, **sugar** alcs., and/or glycosides, especially glycoside antibiotics to prepare the monoesters. Glucose, lauric acid Me ester, and Novozyme SP 435 in. . .

IT 50-69-1, Ribose 50-70-4, Sorbitol, reactions 50-99-7, Glucose, reactions 57-48-7, Fructose, reactions 57-50-1, reactions 57-92-1, Streptomycin, reactions 59-23-4, Galactose, reactions 63-42-3, Lactose 69-65-8, Mannitol 69-79-4, Maltose 111-82-0, Lauric acid methyl ester 147-81-9, Arabinose 528-50-7, Cellobiose 818-44-0, Caprylic acid vinyl ester 3458-28-4, Mannose 9004-34-6, Cellulose, reactions 9004-67-5D, Methylcellulose, **hydrolyzates** 9005-25-8, Starch, reactions 12619-70-4, Cyclodextrin
RL: RCT (Reactant); RACT (Reactant or reagent)
(enzyme catalyzed method for producing monocarboxylic acid esters of mono-, di-, or oligosaccharides)

IT 77607-15-9P, 6-O-Lauroylglucose 143823-61-4P
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(enzyme catalyzed method for producing monocarboxylic acid esters of mono-, di-, or oligosaccharides)

IT 124-38-9, **Carbon dioxide**, uses
RL: NUU (Other use, unclassified); USES (Uses)
(supercrit., solvent; enzyme catalyzed method for producing monocarboxylic acid esters of mono-, di-, or oligosaccharides)

L3 ANSWER 34 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1997:120965 CAPLUS
DOCUMENT NUMBER: 126:304952
TITLE: Solid-state fermentation of wheat bran by Trichoderma reesei QM9414. Substrate composition changes, C balance, enzyme production, growth, and kinetics
AUTHOR(S): Smits, J. P.; Rinzema, A.; Tramper, J.; Van Sonsbeek, H. M.; Knol, W.
CORPORATE SOURCE: Division Agrotechnol. Microbiology, TNO Nutrition Food

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                         Research Inst., Zeist, 3700 AJ, Neth.
SOURCE:                  Applied Microbiology and Biotechnology (1996
                         ), 46(5/6), 489-496
                         CODEN: AMBIDG; ISSN: 0175-7598
PUBLISHER:               Springer
DOCUMENT TYPE:           Journal
LANGUAGE:                English
SO   Applied Microbiology and Biotechnology (1996), 46(5/6), 489-496
     CODEN: AMBIDG; ISSN: 0175-7598
AB   . . . decline.  The activities of xylanase and protease are linearly
     related to the glucosamine level.  No clear correlations between
     glucosamine and carboxylmethyl-cellulose-hydrolyzing enzyme
     activity and amylase activity were found.
ST   fermn wheat bran Trichoderma glucosamine oxygen; carbon
     dioxide fermn wheat bran Trichoderma
IT   Carbohydrates, biological studies
     Mineral elements, biological studies
     Proteins, general, biological studies
     RL: BOC (Biological occurrence); BSU (Biological study, unclassified);
     BIOL (Biological study); OCCU (Occurrence)
        (wheat bran solid-state fermentation by Trichoderma reesei, substrates, C
        balance, enzymes, growth, and kinetics)
IT   124-38-9P, Carbon dioxide, biological studies
     3416-24-8P, Glucosamine
     RL: BOC (Biological occurrence); BPN (Biosynthetic preparation); BSU
     (Biological study, unclassified); BIOL (Biological study); OCCU
     (Occurrence); PREP (Preparation)
        (wheat bran solid-state fermentation by Trichoderma reesei, substrates, C
        balance, enzymes, growth, and kinetics)

L3   ANSWER 35 OF 98  CAPLUS  COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER:        1996:126626  CAPLUS
DOCUMENT NUMBER:         124:170022
TITLE:                   Immobilization of biologically active materials and
                         diagnostic agents in cross-linked
                         poly(organophosphazenes)
INVENTOR(S):             Allcock, Harry R.; Pucher, Shawn R.; Visscher, Karyn
                         B.
PATENT ASSIGNEE(S):      Penn State Research Foundation, USA
SOURCE:                  PCT Int. Appl., 59 pp.
                         CODEN: PIXXD2
DOCUMENT TYPE:           Patent
LANGUAGE:                English
FAMILY ACC. NUM. COUNT:  1
PATENT INFORMATION:

     PATENT NO.          KIND   DATE        APPLICATION NO.         DATE
     ---------------     ----   --------    --------------------    --------
     WO 9532736           A1    19951207    WO 1995-US6854          19950531 <--
         W:  AU, CA, JP, KR, NO
         RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE
     AU 9526581           A     19951221    AU 1995-26581           19950531 <--
PRIORITY APPLN. INFO.:                      US 1994-251510      A   19940531
                                            WO 1995-US6854      W   19950531
PI   WO 9532736 A1   19951207
     PATENT NO.          KIND   DATE        APPLICATION NO.         DATE
     ---------------     ----   --------    --------------------    --------
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PI WO 9532736 A1 19951207 WO 1995-US6854 19950531 <--
W: AU, CA, JP, KR, NO
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE
AU 9526581 A 19951221 AU 1995-26581 19950531 <--

AB . . . at least (1) a substituent group that can be radiation crosslinked and (2) a substituent group that is susceptible to **hydrolysis** under the conditions of use, to impart biodegradability to the polymer, in combination with a substance to be delivered, e.g.,. . .

IT **Carbohydrates** and **Sugars**, biological studies
RL: BUU (Biological use, unclassified); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(immobilization of bioactive materials and diagnostic agents in crosslinked poly(organophosphazenes))

IT **Polysaccharides**, biological studies
RL: BUU (Biological use, unclassified); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(immobilization of bioactive materials and diagnostic agents in crosslinked poly(organophosphazenes))

IT Phosphazene polymers
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); **PREP (Preparation)**; USES (Uses)
(organo-, immobilization of bioactive materials and diagnostic agents in crosslinked poly(organophosphazenes))

IT 9002-13-5DP, Urease, immobilized
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); **PREP (Preparation)**; USES (Uses)
(immobilization of bioactive materials and diagnostic agents in crosslinked poly(organophosphazenes))

IT 98973-15-0P
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); **PREP (Preparation)**; USES (Uses)
(immobilization of bioactive materials and diagnostic agents in crosslinked poly(organophosphazenes))

IT 74-82-8, Methane, biological studies 117-96-4 124-38-9, **Carbon dioxide**, biological studies 2276-90-6 7440-01-9, Neon, biological studies 7440-37-1, Argon, biological studies 7440-39-3, Barium, biological studies 7440-54-2D, Gadolinium, chelates 7440-59-7, Helium, biological studies 7727-37-9, Nitrogen, biological studies 7782-44-7, Oxygen, biological studies 9001-12-1, Collagenase 9001-45-0, Glucuronidase 9001-92-7, Protease 9001-99-4, RNase 9003-98-9, DNase 9003-99-0, Peroxidase 9012-90-2, DNA polymerase 9013-05-2, Phosphatase 9013-19-8, Isomerase 9013-79-0, Esterase 9013-93-8, Phospholipase 9015-85-4, DNA ligase 9025-82-5, Phosphodiesterase 9026-81-7, Nuclease 9027-22-9, Decarboxylase 9031-44-1, Kinase 9031-56-5, Ligase 9033-06-1, Glucosidase 9035-74-9, Phosphorylase 9035-82-9, Dehydrogenase 9046-59-7, Hydroxylase 9047-61-4, Transferase 9055-04-3, Lyase 9055-15-6, Oxidoreductase 10102-44-0, Nitrogen dioxide, biological studies 59017-64-0, Ioxaglic acid 60166-93-0, Iopamidol 66108-95-0, Iohexol 79770-24-4, Iotrol 87771-40-2, Ioversol 92339-11-2, Iodixanol
RL: BUU (Biological use, unclassified); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC

(Process); USES (Uses)
(immobilization of bioactive materials and diagnostic agents in crosslinked poly(organophosphazenes))

IT 26085-02-9P, Poly(dichlorophosphazene)
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(immobilization of bioactive materials and diagnostic agents in crosslinked poly(organophosphazenes))

L3 ANSWER 36 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1994:167079 CAPLUS
DOCUMENT NUMBER: 120:167079
TITLE: Characteristics of products of oxygen-alcohol pulping
AUTHOR(S): Deineko, I. P.; Makarova, O. V.; Pranovich, A. V.
CORPORATE SOURCE: St. Petersburg. Lesotekh. Akad., St. Petersburg, Russia
SOURCE: Koksnes Kimija (**1993**), (1-3), 45-50
CODEN: KHDRDQ; ISSN: 0201-7474
DOCUMENT TYPE: Journal
LANGUAGE: Russian

SO Koksnes Kimija (**1993**), (1-3), 45-50
CODEN: KHDRDQ; ISSN: 0201-7474

AB . . . aromatic rings and rupture of the α-β-carbon-carbon bonds in the propane chains of the lignin monomer unit. Partial dissoln. of **polysaccharides** (25-35%) during pulping was related to **hydrolytic** destruction of the **polysaccharide** chains.

IT 50-00-0P, Formaldehyde, preparation 64-18-6P, Formic acid, preparation 64-19-7P, Acetic acid, preparation 79-14-1P, Glycolic acid, preparation 110-15-6P, Succinic acid, preparation 110-94-1P, Glutaric acid 121-33-5P, Vanillin 121-34-6P, Vanillic acid 124-38-9P, **Carbon dioxide**, preparation 144-62-7P, Oxalic acid, preparation 473-81-4P, Glyceric acid 498-21-5P, Pyrotartaric acid 505-70-4P, Muconic acid 630-08-0P, Carbon monoxide, preparation
RL: FORM (Formation, nonpreparative); **PREP (Preparation)**
(formation of, in ethanol-oxygen pulping of sprucewood)

IT 9004-34-6P
RL: **PREP (Preparation)**
(pulp, ethanol-oxygen, preparation of, from sprucewood, degradation products in)

L3 ANSWER 37 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1994:109834 CAPLUS
DOCUMENT NUMBER: 120:109834
TITLE: Purification of crude **sugar** liquor from agricultural residues
INVENTOR(S): Watano, Shigeru; Tsutsumi, Taira; Kano, Sadao; Ishizaki, Kenji; Tokuda, Masatsugu; Sasaki, Hiroaki; Shiba, Hirotaka; Matsumoto, Shinya
PATENT ASSIGNEE(S): Hokkaido Sugar Co, Japan; Suntory Ltd
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

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JP 05253000	A	19931005	JP 1992-84976	19920309 <--

PRIORITY APPLN. INFO.: JP 1992-84976 19920309

TI Purification of crude **sugar** liquor from agricultural residues

PI JP 05253000 A **19931005** Heisei

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 05253000	A	19931005	JP 1992-84976	19920309 <--

AB Crude **sugar** liquor obtained by alkali **hydrolysis**, pressure-cooker treatment and/or enzyme treatment of wood, corncob, bagasse, cotton-seed shell, straw, etc. is purified by using lime and an acid which can form insol. salt with lime for good filtration separation Thus, an alkali-treated, xylanase-**hydrolyzed** corncob-derived **sugar** liquor was combined with a milk of lime at 43° to pH 11, flushed with CO2 gas, precipitate was removed,. . .

ST agriculture residue **hydrolysis** **sugar** purifn; corncob **hydrolysis** **sugar** purifn; bagasse **hydrolysis** **sugar** purifn; seed cotton **hydrolysis** **sugar** purifn; wood residue **hydrolysis** **sugar** purifn; straw **hydrolysis** **sugar** purifn

IT **Carbohydrates** and **Sugars**, preparation
Oligosaccharides
RL: **PREP (Preparation)**
(agricultural residue-based, refining of, with lime and acids as precipitation aids)

IT Lime (chemical)
RL: USES (Uses)
(in purin. of **sugar** from agricultural wastes)

IT Bagasse
Corncob
Wood
(**sugars** from, purin. of, lime and acids for)

IT Waste solids
(agricultural, **sugars** from, purin. of, lime and acids for)

IT Straw
(rice, **sugars** from, purin. of, lime and acids for)

IT Rice
(straw, **sugars** from, purin. of, lime and acids for)

IT 124-38-9, **Carbon** **dioxide**, uses
RL: USES (Uses)
(in purin. of **sugar** from agricultural wastes)

L3 ANSWER 38 OF 98 CAPLUS

ACCESSION NUMBER: 1993:493671 CAPLUS
DOCUMENT NUMBER: 119:93671
TITLE: Effect of **sugar** consumption on ethanol fermentation in a tower fermentor packed with self-aggregating yeast: mathematical modeling and bed height prediction
AUTHOR(S): Chen, C. S.; Chan, E.; Gong, C. S.; Chen, L. F.
CORPORATE SOURCE: Dep. Food Sci., Purdue Univ., West Lafayette, IN, 47907, USA
SOURCE: Applied Biochemistry and Biotechnology (**1993**), 39-40, 491-508
CODEN: ABIBDL; ISSN: 0273-2289
DOCUMENT TYPE: Journal

LANGUAGE: English

TI Effect of **sugar** consumption on ethanol fermentation in a tower fermentor packed with self-aggregating yeast: mathematical modeling and bed height prediction

SO Applied Biochemistry and Biotechnology (**1993**), 39-40, 491-508
CODEN: ABIBDL; ISSN: 0273-2289

AB . . . Large aggregates (2-3 mm) were formed and packed in the column. The height of this packed region depends on the **sugar** concentration As **sugar** concns. were reduced to below a critical value, most of the large aggregates disintegrated into smaller aggregates (0.1-0.2 mm). Above. . . small amount of large aggregates were fluidized and formed a well mixed region by the liquid medium and the produced **carbon dioxide.** A math. model of a plug flow with consideration of axial dispersion and a Continuous Stirred Tank reactor (CSTR) in series is proposed to describe such fermentor. The concentration profile of **sugar** can be simulated by this model. The height of the packed bed region can then be estimated based on the predetd. critical **sugar** concentration Final ethanol concentration and the productivity of such fermentor can also be predicted.

IT Saccharomyces uvarum
(ethanol fermentation by, in tower fermentor, **sugar** consumption effect on)

IT **Carbohydrates** and **Sugars**, biological studies
RL: BIOL (Biological study)
(ethanol production from, by yeast in tower fermentor)

IT Fermentation
(ethanol, by yeast in tower fermentor, **sugar** consumption effect on)

IT Simulation and Modeling, biological
(of ethanol fermentation, in tower fermentor, **sugar** consumption in)

IT Syrups
(**hydrolyzed** starch, ethanol fermentation of, by yeast in tower fermentor)

IT Fermentation apparatus
(tower fermentor, ethanol fermentation by yeast in, **sugar** consumption effect on)

IT 64-17-5P, Ethanol, preparation
RL: BMF (Bioindustrial manufacture); BIOL (Biological study); **PREP (Preparation)**
(manufacture of, by yeast in tower fermentor, **sugar** consumption effect on)

IT 9005-25-8
RL: BIOL (Biological study)
(syrups, **hydrolyzed** starch, ethanol fermentation of, by yeast in tower fermentor)

L3 ANSWER 39 OF 98 CAPLUS

ACCESSION NUMBER: 1992:636808 CAPLUS
DOCUMENT NUMBER: 117:236808
TITLE: Stable isotope fractionation of biomonomers during protokerogen formation
AUTHOR(S): Qian, Y.; Engel, M. H.; Macko, S. A.
CORPORATE SOURCE: Sch. Geol. Geophys., Univ. Oklahoma, Norman, OK, 73019, USA
SOURCE: Chemical Geology (**1992**), 101(3-4), 201-10
CODEN: CHGEAD; ISSN: 0009-2541
DOCUMENT TYPE: Journal

LANGUAGE: English
SO Chemical Geology (**1992**), 101(3-4), 201-10
CODEN: CHGEAD; ISSN: 0009-2541
AB . . . alanine and glucose were heated at 100° for up to 40 days to exam. the condensation of amino acids and **sugars** (e.g., the Maillard reaction) in relation to the diagenetic formation of humic materials in sediments. The δ13C- and δ15N-values of. . . 8.8.permill. and 2.7.permill., resp., relative to their initial compns. In contrast, the insol. melanoidin product and alanine recovered by acid **hydrolysis** of the melanoidin were both depleted in 13C and 15N relative to the starting materials. The magnitude of this isotopic. . .
IT **Carbohydrates** and **Sugars**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(Maillard reaction of, with amino acids, kinetic stable isotope fractionation in, organic matter diagenesis and protokerogen formation in relation to)
IT Amino acids, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(Maillard reaction of, with **sugars**, kinetic stable isotope fractionation in, organic matter diagenesis and protokerogen formation in relation to)
IT Organic matter
(diagenesis of, Maillard condensation of amino acids with **sugars** in, kinetic stable isotope fractionation in)
IT Humus and Humic substances
RL: FORM (Formation, nonpreparative)
(formation of, by condensation of amino acids and **sugars**, kinetic stable isotope fractionation in)
IT Diagenesis
(of organic matter, Maillard condensation of amino acids with **sugars** in, kinetic stable isotope fractionation in)
IT Kerogens
RL: FORM (Formation, nonpreparative)
(proto-, formation of, kinetic stable isotope fractionation of Maillard condensation of amino acids with **sugars** in relation to)
IT 50-99-7P, Glucose, reactions
RL: RCT (Reactant); **PREP (Preparation)**; RACT (Reactant or reagent)
(Maillard reaction of, with alanine, kinetic stable isotope fractionation in, organic matter diagenesis and protokerogen formation in relation to)
IT 56-41-7P, Alanine, reactions
RL: RCT (Reactant); **PREP (Preparation)**; RACT (Reactant or reagent)
(Maillard reaction of, with glucose, kinetic stable isotope fractionation in, organic matter diagenesis and protokerogen formation in relation to)
IT 124-38-9P, **Carbon dioxide**, preparation
RL: FORM (Formation, nonpreparative); **PREP (Preparation)**
(formation of, in Maillard reaction of alanine and glucose, kinetic stable isotope fractionation in, organic matter diagenesis and protokerogen formation in relation to)

L3 ANSWER 40 OF 98 CAPLUS
ACCESSION NUMBER: 1992:126924 CAPLUS
DOCUMENT NUMBER: 116:126924
TITLE: Effect of pretreatment on simultaneous

saccharification and fermentation of hardwood into acetone/butanol

AUTHOR(S): Shah, M. M.; Song, S. K.; Lee, Y. Y.; Torget, Robert

CORPORATE SOURCE: Dep. Chem. Eng., Auburn Univ., Auburn, AL, 36849, USA

SOURCE: Applied Biochemistry and Biotechnology (**1991**), 28-29, 99-109
CODEN: ABIBDL; ISSN: 0273-2289

DOCUMENT TYPE: Journal

LANGUAGE: English

SO Applied Biochemistry and Biotechnology (**1991**), 28-29, 99-109
CODEN: ABIBDL; ISSN: 0273-2289

AB . . . and fermentation (SSF), using Clostridium acetobutylicum. The main objectives of the pretreatment were to achieve efficient separation of lignin from **carbohydrates**, and to obtain maximum **sugar** yield on enzymic **hydrolysis** of pretreated wood. Two methods gave promising results: (1) supercrit. CO2-SO2 treatment, and (2) monoethanolamine (MEA) treatment. The MEA pretreatment removed above 90% of hardwood lignin while retaining 83% of **carbohydrates.** With CO2-SO2 pretreatment, the degree of lignin separation was lower. Under the scheme of SSF, the pretreated hardwood was converted. . . that 15 g of ABE/100 g of dry aspen wood was produced. In the overall process of SSF, the enzymic **hydrolysis** was the rate-limiting step. The ability of C. acetobutylicum to metabolize various 6-carbon and 5-carbon **sugars** resulted in efficient utilization of all available **sugars** from hardwood.

IT 7446-09-5, Sulfur dioxide, uses
RL: USES (Uses)
(hardwood pretreatment with supercrit. **carbon dioxide** and, for simultaneous saccharification and acetone-butanol fermentation)

IT 67-64-1P, Acetone, preparation 71-36-3P, Butanol, preparation
RL: BMF (Bioindustrial manufacture); BIOL (Biological study); **PREP (Preparation)**
(manufacture of, by simultaneous saccharification and fermentation of hardwood,
pretreatment effect on)

IT 124-38-9, **Carbon dioxide**, uses
RL: USES (Uses)
(supercrit., sulfur dioxide mixture with, hardwood pretreatment with, for simultaneous saccharification and acetone-butanol fermentation)

L3 ANSWER 41 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1990:119341 CAPLUS

DOCUMENT NUMBER: 112:119341

TITLE: A method and apparatus for decomposition of **polysaccharides** by **carbon dioxide** laser beam

INVENTOR(S): Azuma, Junichi; Hosobuchi, Tsutomu; Katada, Tsutomu

PATENT ASSIGNEE(S): Japan Chemical Engineering and Machinery Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

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JP 01224386	A	19890907	JP 1988-49105	19880301 <--

PRIORITY APPLN. INFO.: JP 1988-49105 19880301

TI A method and apparatus for decomposition of **polysaccharides** by **carbon dioxide** laser beam

PI JP 01224386 A **19890907** Heisei

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 01224386	A	19890907	JP 1988-49105	19880301 <--

AB Irradiation of **polysaccharides** with CO2 laser beam melts the **polysaccharides**, cleaves the bond between the constituent monosaccharide units, and decomps. the **polysaccharides** without increase in the number of hydroxy groups to give water-soluble, low mol. weight compds. The decomposition (saccharification) products do not have a terminal reducing group in contrast to **hydrolysis**, but contain, e.g. 1,6-anhydro-β-D-glucopyranose at the terminal as shown in oligosaccharides I (n > 0) obtained from cellulose, and are. . . CO2 laser oscillator, a reflecting mirror, and a nozzle equipped with a condenser lens and assist gas entry, wherein the **polysaccharides** are placed in the defocus zone under the nozzle.

ST saccharification **polysaccharide carbon dioxide** laser; **carbon dioxide** laser **polysaccharide** decompn app

IT Food
(additives for, decomposition products of **polysaccharides** as, preparation of, by **carbon dioxide** laser)

IT Oligosaccharides
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(anhydroglucopyranose containing, preparation of, by **carbon dioxide** laser decomposition of cellulose)

IT **Polysaccharides**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(decomposition of, by **carbon dioxide** laser, apparatus for)

IT Saccharification
(of **polysaccharides**, by **carbon dioxide** laser)

IT Food
(dietetic, decomposition products of **polysaccharides**, preparation of, by **carbon dioxide** laser)

IT Photolysis
(laser-induced, of **polysaccharides**, apparatus for)

IT 9004-34-6, Cellulose, reactions 9005-25-8, Starch, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(decomposition of, by **carbon dioxide** laser)

L3 ANSWER 42 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1989:81923 CAPLUS

DOCUMENT NUMBER: 110:81923

TITLE: Bacterial population development and chemical characteristics of refuse decomposition in a simulated sanitary landfill

AUTHOR(S): Barlaz, M. A.; Schaefer, D. M.; Ham, R. K.

CORPORATE SOURCE: Dep. Civ. Environ. Eng., Univ. Wisconsin, Madison, WI, 53706, USA

SOURCE: Applied and Environmental Microbiology (**1989**), 55(1), 55-65
CODEN: AEMIDF; ISSN: 0099-2240

DOCUMENT TYPE: Journal
LANGUAGE: English
SO Applied and Environmental Microbiology (**1989**), 55(1), 55-65
CODEN: AEMIDF; ISSN: 0099-2240
AB . . . the pH of the refuse ecosystem from 7.5 to 5.7 was attributed to the accumulation of acidic end products of **sugar** fermentation, to the low acid-consuming activity of the acetogenic and methanogenic bacteria, and to levels of O and NO3- in the fresh refuse sufficient for oxidation of only 8% of the **sugars** to CO2 and H2O. Cellulose and hemicellulose decomposition was most rapid after establishment of the methanogenic and acetogenic populations and a reduction in the initial accumulation of carboxylic acids. A total of 72% of these **carbohydrates** were degraded in the container sampled after 111 days. Initially acetate utilization, but ultimately polymer **hydrolysis**, limited the rate of refuse conversion to CH4. Microbial and chemical composition data were combined to formulate an updated description. . . .
IT **Carbohydrates** and **Sugars**, uses and miscellaneous
Carboxylic acids, uses and miscellaneous
Nitrates, uses and miscellaneous
Phosphates, uses and miscellaneous
Sulfates, uses and miscellaneous
Sulfides, uses and miscellaneous
RL: USES (Uses)
(in leachate, of landfills, refuse biodecompn. in relation to)
IT 74-82-8P, Methane, preparation 124-38-9P, **Carbon dioxide**, preparation
RL: FORM (Formation, nonpreparative); **PREP (Preparation)**
(formation of, in refuse biodecompn. in landfills)

L3 ANSWER 43 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1988:628659 CAPLUS
DOCUMENT NUMBER: 109:228659
TITLE: **Carbon dioxide** enrichment and its relationship to bioconversion of cellulosic biomass of sweet potato (Ipomoea batatas L.) into fermentable **sugars**
AUTHOR(S): Bhattacharya, S.; Eatman, J. F.; Biswas, P. K.; Tolbert, M. E. M.
CORPORATE SOURCE: Carver Res. Found., Tuskegee Univ., Tuskegee, AL, 36088, USA
SOURCE: Biomass (**1988**), 15(4), 259-68
CODEN: BIOME9; ISSN: 0144-4565
DOCUMENT TYPE: Journal
LANGUAGE: English
TI **Carbon dioxide** enrichment and its relationship to bioconversion of cellulosic biomass of sweet potato (Ipomoea batatas L.) into fermentable **sugars**
SO Biomass (**1988**), 15(4), 259-68
CODEN: BIOME9; ISSN: 0144-4565
AB . . . μL/L for 90 days. The leaves and stems after the harvest were used as substrates for the production of fermentable **sugars.** Elevated CO2 concns. increased the cellulose content of stems, being most pronounced at 506 μL/L. Hemicellulose content of leaves and. . . enrichment. The increase in cellulosic biomass in plants grown in CO2-enriched environment resulted in increased conversion of cellulose into fermentable **sugars.** The saccharification was greater in

stems than in leaves. It was also found that chemical pretreatment of stems and leaves enhanced the enzymic **hydrolysis** and the yields of glucose were higher than those from untreated stems and leaves.

ST **carbon** **dioxide** cellulose **sugar** sweet potato

IT Sweet potato
(fermentable **sugars** of leaves and stems of, **carbon** **dioxide** enrichment enhancement of bioconversion of)

IT **Carbohydrates** and **Sugars**, preparation
RL: **PREP** **(Preparation)**
(fermentable, conversion of sweet potato biomass to, **carbon** **dioxide** enrichment enhancement of)

IT Saccharification
(of sweet potato biomass, **carbon** **dioxide** enrichment enhancement of)

IT 124-38-9
RL: BIOL (Biological study)
(**carbohydrates** and **Sugars**, fermentable, conversion of sweet potato biomass to, **carbon** **dioxide** enrichment enhancement of)

IT 124-38-9, **Carbon** **dioxide**, biological studies
RL: BIOL (Biological study)
(enrichment in, bioconversion of sweet potato biomass into fermentable **sugars** enhancement by)

IT 9004-34-6, Cellulose, biological studies 9005-53-2, Lignin, biological studies 9034-32-6, Hemicellulose
RL: BIOL (Biological study)
(of sweet potato biomass, **carbon** **dioxide** enrichment effect on)

L3 ANSWER 44 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1988:226323 CAPLUS
DOCUMENT NUMBER: 108:226323
TITLE: Characteristics of the degradation of excess activated sludge in anaerobic acidogenic phase
AUTHOR(S): Li, Yuyou; Noike, Tatsuya
CORPORATE SOURCE: Dep. Civil Eng., Tohoku Univ., Sendai, 980, Japan
SOURCE: Suishitsu Odaku Kenkyu (1978-1991) (**1987**), 10(12), 729-40
CODEN: SOKEDN; ISSN: 0387-2025
DOCUMENT TYPE: Journal
LANGUAGE: Japanese

SO Suishitsu Odaku Kenkyu (1978-1991) (**1987**), 10(12), 729-40
CODEN: SOKEDN; ISSN: 0387-2025

AB . . . sludge. About 60% of total COD of excess activated sludge was degraded in 130 days in the batch experiment The **hydrolysis** reaction is the rate-limiting step in overall anaerobic digestion. The **hydrolysis** rate of degradable materials in excess activated sludge is described by a linear equation. **Hydrolytic** rate consts. were: 0.44 - 0.89/day on the basis of volatile suspended solids and 0.32 - 0.65/day on the basis. . .

IT **Carbohydrates** and **Sugars**, preparation
Fatty acids, preparation
Lipids, preparation
RL: FORM (Formation, nonpreparative); **PREP** **(Preparation)**
(formation of, in acidogenic phase of secondary wastewater treatment sludge anaerobic digestion)

IT 64-19-7P, Acetic acid, preparation 74-82-8P, Methane, preparation

79-09-4P, Propionic acid, preparation   79-31-2P, Isobutyric acid
107-92-6P, Butyric acid, preparation   109-52-4P, Valeric acid,
preparation   124-38-9P, **Carbon dioxide**, preparation
503-74-2P, Isovaleric acid   7727-37-9P, Nitrogen, preparation
RL: FORM (Formation, nonpreparative); **PREP (Preparation)**
(formation of, in acidogenic phase of secondary wastewater treatment
sludge anaerobic digestion)

L3 ANSWER 45 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1988:192206 CAPLUS
DOCUMENT NUMBER: 108:192206
TITLE: The effects of environmental factors on acid-phase digestion of sewage sludge
AUTHOR(S): Henry, Michael P.; Sajjad, Ashfaq; Ghosh, Sambhunath
CORPORATE SOURCE: Inst. Gas Technol., Chicago, IL, 60616, USA
SOURCE: Proceedings of the Industrial Waste Conference (**1988**), Volume Date 1987, 42nd, 727-37
CODEN: PIWCAX; ISSN: 0073-7682
DOCUMENT TYPE: Journal
LANGUAGE: English

SO Proceedings of the Industrial Waste Conference (**1988**), Volume
Date 1987, 42nd, 727-37
CODEN: PIWCAX; ISSN: 0073-7682

AB Feed **hydrolysis** and liquefaction efficiencies in acid-phase digestion of sewage sludge increased with culture pH and temperature, but were not significantly affected. . . the greatest impact on organic removals, which were 14-23% higher in cultures operated at pH 7 than at pH 5. **Carbohydrate** removals were influenced more strongly by pH than were lipid or crude protein removals. Culture temperature influenced **carbohydrate** and protein removal, but had no significant effect on lipid removals. Methanogenesis was retarded under acidic pH or thermophilic conditions.

IT **Carbohydrates** and **Sugars**, uses and miscellaneous
Lipids, uses and miscellaneous
Proteins, uses and miscellaneous
RL: REM (Removal or disposal); PROC (Process)
(removal of, from sewage sludge, by acid-phase digestion, pH and
retention time and temperature effect on)

IT 64-19-7P, Acetic acid, preparation   79-09-4P, Propionic acid, preparation
79-31-2P, Isobutyric acid   107-92-6P, Butyric acid, preparation
109-52-4P, Valeric acid, preparation   142-62-1P, Caproic acid,
preparation   503-74-2P, Isovaleric acid   7664-41-7P, Ammonia,
preparation
RL: FORM (Formation, nonpreparative); **PREP (Preparation)**
(formation of, in acid-phase digestion of sewage sludge, pH and
retention time and temperature effect on)

IT 74-82-8, Methane, uses and miscellaneous   124-38-9, **Carbon
dioxide**, uses and miscellaneous
RL: USES (Uses)
(in biogas, from acid-phase digestion of sewage sludge, environmental
factor effect on)

L3 ANSWER 46 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1987:199140 CAPLUS
DOCUMENT NUMBER: 106:199140
TITLE: Conversion of biomass **carbohydrates** into hydrocarbon products

AUTHOR(S): Hanniff, Mohammed I.; Dao, Le H.
CORPORATE SOURCE: INRS, Inst. Natl. Rech. Sci., Varennes, QC, J0L 2P0, Can.
SOURCE: Energy from Biomass and Wastes (**1987**), 10th, 831-43
CODEN: EBWADU; ISSN: 0277-7851
DOCUMENT TYPE: Journal
LANGUAGE: English
TI Conversion of biomass **carbohydrates** into hydrocarbon products
SO Energy from Biomass and Wastes (**1987**), 10th, 831-43
CODEN: EBWADU; ISSN: 0277-7851
AB . . . ZSM-5 zeolite catalyst to prepare hydrocarbon fuels and chems. The substrates were used as models of compns. obtained in acid **hydrolysis** of cellulosic materials. The effect of temperature, MeOH [67-56-1], and H2O addition on the catalytic process efficiency were evaluated.
ST hydrocarbon catalytic conversion furfural monosaccharide; zeolite catalyst **carbohydrate** fuel chem
IT Coke
RL: FORM (Formation, nonpreparative)
(formation of, in catalytic conversion of **carbohydrates** and furfural, for fuels and chemical manufacture)
IT Fuels
Aromatic hydrocarbons, preparation
RL: **PREP (Preparation)**
(manufacture of, from **carbohydrates** and furfural, with zeolite catalysts)
IT Hydrocarbons, preparation
RL: **PREP (Preparation)**
(C1-8, manufacture of, from **carbohydrates** and furfural, with zeolite catalysts)
IT Alkenes, preparation
RL: **PREP (Preparation)**
(C2-6, manufacture of, from **carbohydrates** and furfural, with zeolite catalysts)
IT Zeolites, uses and miscellaneous
RL: CAT (Catalyst use); USES (Uses)
(ZSM 5, catalysts, for fuels and chemical manufacture, from **carbohydrates** and furfural)
IT Aromatic hydrocarbons, preparation
RL: **PREP (Preparation)**
(polycyclic, manufacture of, from **carbohydrates** and furfural, with zeolite catalysts)
IT 67-56-1, Methanol, uses and miscellaneous 7732-18-5, Water, uses and miscellaneous
RL: USES (Uses)
(catalytic conversion of **carbohydrates** and furfural in presence of, with zeolites)
IT 124-38-9P, **Carbon dioxide**, preparation 630-08-0P, Carbon monoxide, preparation
RL: FORM (Formation, nonpreparative); **PREP (Preparation)**
(formation of, in catalytic conversion of **carbohydrates** and furfural, for fuels and chemical manufacture)
IT 50-99-7, Glucose, uses and miscellaneous 56-81-5, Glycerol, uses and miscellaneous 57-48-7, Fructose, uses and miscellaneous 98-01-1, uses and miscellaneous 582-52-5 9004-34-6D, Cellulose, **hydrolysis** derivs. 20880-92-6

RL: USES (Uses)
(hydrocarbon fuels and chemical manufacture from, by catalytic conversion, with
zeolites)
IT 1335-30-4P
RL: **PREP** **(Preparation)**
(zeolites, ZSM 5, catalysts, for fuels and chemical manufacture, from **carbohydrates** and furfural)

L3 ANSWER 47 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1987:121590 CAPLUS
DOCUMENT NUMBER: 106:121590
TITLE: Fractionation of two tropical wood (eucalyptus and wapa) by thermomechanical aqueous phase treatment. Part II. Chemical characteristics of the residual solids and kinetic considerations of the solubilization of the hemicellulose
AUTHOR(S): Carrasco, F.; Chornet, E.; Overend, R. P.; Heitz, M.
CORPORATE SOURCE: Univ. Sherbrooke, Sherbrooke, QC, J1K 2R1, Can.
SOURCE: Canadian Journal of Chemical Engineering (**1987**), 65(1), 71-7
CODEN: CJCEA7; ISSN: 0008-4034
DOCUMENT TYPE: Journal
LANGUAGE: French
SO Canadian Journal of Chemical Engineering (**1987**), 65(1), 71-7
CODEN: CJCEA7; ISSN: 0008-4034
AB . . . decompression through an orifice (ΔP = 17.2 Mapa), reaction at 80-230°, and rapid quenching. The residues were analyzed by acid **hydrolysis** and elemental anal. The quantification of the monosaccharides present in the residues allowed study of the solubilization profiles of both. . .
IT **Carbohydrates** and **Sugars**, preparation
RL: FORM (Formation, nonpreparative); **PREP** **(Preparation)**
(formation of, in aqueous liquefaction of tropical wood)
IT Liquefaction
(**hydrolytic** thermomech., of tropical wood, solubilization kinetics of hemicellulose in relation to)
IT Kinetics of **hydrolysis**
(of hemicellulose in tropical wood, thermomech. liquefaction in relation to)
IT 50-99-7P, Glucose, preparation 58-86-6P, Xylose, preparation 59-23-4P, preparation 3458-28-4P 10323-20-3P
RL: FORM (Formation, nonpreparative); **PREP** **(Preparation)**
(formation of, in aqueous liquefaction of tropical wood)
IT 124-38-9P, **Carbon** **dioxide**, preparation
RL: FORM (Formation, nonpreparative); **PREP** **(Preparation)**
(formation of, in thermomech. aqueous liquefaction of tropical wood, kinetics of)

L3 ANSWER 48 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1987:89555 CAPLUS
DOCUMENT NUMBER: 106:89555
TITLE: Treatment characteristics of the two phase anaerobic digestion system using an upflow filter
AUTHOR(S): Tanaka, S.; Matsuo, T.
CORPORATE SOURCE: Dep. Civ. Eng., Meisei Univ., Hino, 191, Japan
SOURCE: Water Science and Technology (**1986**),

18(7-8), 217-24
CODEN: WSTED4; ISSN: 0273-1223
DOCUMENT TYPE: Journal
LANGUAGE: English
SO Water Science and Technology (**1986**), 18(7-8), 217-24
CODEN: WSTED4; ISSN: 0273-1223
AB . . . methanogenesis) resulted in a COD removal of 92% at an overall hydraulic residence time of 4.4 days. The decomposition of **carbohydrates** and proteins was 95% and 50%, resp., during the acid phase. Lipids were rapidly **hydrolyzed** to long-chain fatty acids but not degraded during the acid phase. All milk constituents were completely decomposed during the CH4. . .
IT **Carbohydrates** and **Sugars**, uses and miscellaneous
Lipids, uses and miscellaneous
Proteins, uses and miscellaneous
RL: REM (Removal or disposal); PROC (Process)
(removal of, from wastewater from powdered milk manufacture, two-phase anaerobic process in)
IT 64-17-5P, Ethanol, biological studies 64-19-7P, Acetic acid, biological studies 79-09-4P, Propionic acid, biological studies 107-92-6P, n-Butyric acid, biological studies 109-52-4P, n-Valeric acid, biological studies
RL: BIOL (Biological study); **PREP (Preparation)**
(formation and utilization of, in two-phase anaerobic treatment of wastewater from powdered milk manufacture)
IT 74-82-8P, Methane, preparation 124-38-9P, **Carbon dioxide**, uses and miscellaneous
RL: FORM (Formation, nonpreparative); **PREP (Preparation)**
(formation of, in two-phase anaerobic treatment of wastewater from powdered milk manufacture)

L3 ANSWER 49 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1987:55219 CAPLUS
DOCUMENT NUMBER: 106:55219
TITLE: Performance of bacterial strains used for distillery waste treatment on different substrates
AUTHOR(S): Kumar, Santosh; Viswanathan, L.
CORPORATE SOURCE: Biochem. Div., Natl. Sugar Inst., Kanpur, 208017, India
SOURCE: Enzyme and Microbial Technology (**1986**), 8(12), 718-24
CODEN: EMTED2; ISSN: 0141-0229
DOCUMENT TYPE: Journal
LANGUAGE: English
SO Enzyme and Microbial Technology (**1986**), 8(12), 718-24
CODEN: EMTED2; ISSN: 0141-0229
AB . . . different substrates. Glucose [50-99-7] and xylose [58-86-6] exhibited growth patterns similar to that on spent wash water. Glucose, xylose, casein **hydrolyzate**, and amino acids led to a significant decrease in COD when compared to glycerol [56-81-5]. The rate of substrate consumption was maximum in the case of glucose followed by amino acids, casein **hydrolyzate**, xylose, and glycerol. Volatile acid and CO2 formation from glucose was .apprx.50% of the theor. yield based on glycolysis and. . .
IT Amino acids, uses and miscellaneous
Carbohydrates and **Sugars**, uses and miscellaneous
RL: REM (Removal or disposal); PROC (Process)

(removal of, from distillery waste, acclimated bacteria in)
IT Caseins, compounds
RL: REM (Removal or disposal); PROC (Process)
(**hydrolyzates**, removal of, from waste, of distillery plant, acclimated bacteria in)
IT 124-38-9P, **Carbon dioxide**, preparation
RL: FORM (Formation, nonpreparative); **PREP (Preparation)**
(formation of, in distillery waste treatment, acclimated bacteria in)

L3 ANSWER 50 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1987:6671 CAPLUS
DOCUMENT NUMBER: 106:6671
TITLE: Utilization of carbonic gas in the invert **sugar** process
INVENTOR(S): Ferreira, Vitor Francisco; Paiva, Lucia Moreira Campos; Esteves, Angela Maria Lavogade
PATENT ASSIGNEE(S): Instituto Nacional de Tecnologia (INT), Brazil
SOURCE: Braz. Pedido PI, 6 pp.
CODEN: BPXXDX
DOCUMENT TYPE: Patent
LANGUAGE: Portuguese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
BR 8502612	A	19851105	BR 1985-2612	19850531 <--

PRIORITY APPLN. INFO.: BR 1985-2612 19850531
TI Utilization of carbonic gas in the invert **sugar** process
PI BR 8502612 A **19851105**

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI BR 8502612	A	19851105	BR 1985-2612	19850531 <--

AB A process for **hydrolysis** of sucrose to produce invert **sugar** uses CO_2 dissolved in water as acid catalyst and eliminates the need to purify the invert **sugar** solution Yields depend on the CO_2 pressure. Thus, CO_2 was bubbled into a 1.5 L 40% aqueous solution of crystalline
sugar for 5 min and then the CO_2 pressure was adjusted to 3 or 4 atmospheric; the mixture was heated to. . .
ST invert **sugar** **hydrolysis** sucrose; carbonic acid invert **sugar** manuf; **carbon dioxide** invert **sugar** manuf
IT **Hydrolysis** catalysts
(acid, carbonic, for sucrose solution in invert **sugar** syrup manufacture)
IT 463-79-6, uses and miscellaneous
RL: CAT (Catalyst use); USES (Uses)
(catalysts, for **hydrolysis** of sucrose solution to invert **sugar** syrups)
IT 124-38-9, uses and miscellaneous
RL: CAT (Catalyst use); USES (Uses)
(catalysts, in manufacture of invert **sugar** syrups)
IT 57-50-1, Sucrose, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(**hydrolysis** of, to invert **sugar** syrup, carbonic acid-catalyzed)

IT 8013-17-0P, Invert **sugar**
RL: IMF (Industrial manufacture); **PREP (Preparation)**
(manufacture of, catalysts for, carbonic acid solution as)

L3 ANSWER 51 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1986:445143 CAPLUS
DOCUMENT NUMBER: 105:45143
TITLE: A new process for obtaining inverted **sugar** using **carbon dioxide**
AUTHOR(S): Esteves, A. M. L.; Ferreira, V. F.; Paiva, L. M. C.
CORPORATE SOURCE: Div. Prod. Nat., Inst. Nac. Tecnol., Rio de Janeiro, Brazil
SOURCE: Starch/Staerke (**1986**), 38(5), 173-5
CODEN: STARDD; ISSN: 0038-9056
DOCUMENT TYPE: Journal
LANGUAGE: English
TI A new process for obtaining inverted **sugar** using **carbon dioxide**
SO Starch/Staerke (**1986**), 38(5), 173-5
CODEN: STARDD; ISSN: 0038-9056
AB **Hydrolysis** of 60% sucrose (I) [57-50-1] in the presence of CO2 at 125° gave invert **sugar** [8013-17-0]. The reducing power of **sugar** mixture increased with increasing reaction time and CO2 pressure, and at 4 atm and after 130 min, the efficiency of. . .
ST sucrose inversion **carbon dioxide**; invert **sugar** prepn sucrose
IT 124-38-9, uses and miscellaneous
RL: USES (Uses)
(inversion of sucrose in presence of, invert **sugar** preparation in relation to)
IT 57-50-1, reactions
RL: USES (Uses)
(inversion of, in presence of **carbon dioxide**, invert **sugar** preparation in relation to)
IT 8013-17-0P
RL: **PREP (Preparation)**
(preparation of, by inversion of sucrose in presence of **carbon dioxide**)

L3 ANSWER 52 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1986:110043 CAPLUS
DOCUMENT NUMBER: 104:110043
TITLE: Unprotected **sugar** phosphinimines: a facile route to cyclic carbamates of amino **sugars**
AUTHOR(S): Kovacs, Jozsef; Pinter, Istvan; Messmer, Andras; Toth, Gabor
CORPORATE SOURCE: Cent. Res. Inst. Chem., Hung. Acad. Sci., Budapest, H-1525, Hung.
SOURCE: Carbohydrate Research (**1985**), 141(1), 57-65
CODEN: CRBRAT; ISSN: 0008-6215
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 104:110043
TI Unprotected **sugar** phosphinimines: a facile route to cyclic carbamates of amino **sugars**
SO Carbohydrate Research (**1985**), 141(1), 57-65
CODEN: CRBRAT; ISSN: 0008-6215

AB   Unprotected **sugar** phosphinimines were prepared from various azido **sugars** by reaction with PPh3 and were converted by CO2 into cyclic carbamates of amino **sugars.** The reaction could be carried out more conveniently in a one-pot process without isolation of the phosphinimines. The 13C and. . .

ST   azidohexopyranoside triphenylphosphine redn; hexopyranosyltriphenylphosphinimide cyclization **carbon dioxide**; aminodioxyhexopyranoside cyclic carbamate

IT   Monosaccharides
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(aminodeoxyhexopyranoside cyclic carbamates, preparation of, from hexopyranoside phosphinimines)

IT   Carbonylation
(of pyranosyltriphenylphosphinimides with **carbon dioxide**, pyranoside cyclic carbamates from)

IT   95342-53-3P   100639-16-5P   100759-72-6P   100759-74-8P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation and acetylation of)

IT   100639-17-6P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation and acetylation of, with sodium acetate)

IT   100639-14-3P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation and carbonylation of)

IT   100639-11-0P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation and **hydrolysis** of)

IT   7284-37-9P   95266-86-7P   100639-10-9P   100639-12-1P   100639-13-2P   100639-15-4P   100639-18-7P   100759-73-7P   100759-75-9P
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(preparation of)

L3   ANSWER 53 OF 98   CAPLUS   COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1984:485678 CAPLUS
DOCUMENT NUMBER: 101:85678
TITLE: Increasing **sugar** yield in sugarcane with 2-(2-imidazolin-2-yl)pyridine compounds
INVENTOR(S): Orwick, Philip L.; Templeton, Andrew R.
PATENT ASSIGNEE(S): American Cyanamid Co. , USA
SOURCE: U.S., 28 pp. Cont.-in-part of U.S. Ser. No. 155,900, abandoned.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4404012	A	19830913	US 1981-255937	19810420 <--
AU 8171215	A	19811210	AU 1981-71215	19810601 <--
AU 545949	B2	19850808		
BR 8103446	A	19820224	BR 1981-3446	19810601 <--

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    ZA 8103676          A      19820630    ZA 1981-3676          19810602 <--
PRIORITY APPLN. INFO.:                      US 1980-155900      A2 19800602
                                            US 1981-255937      A  19810420
OTHER SOURCE(S):         CASREACT 101:85678; MARPAT 101:85678
TI    Increasing sugar yield in sugarcane with 2-(2-imidazolin-2-
      yl)pyridine compounds
PI    US 4404012 A    19830913
      PATENT NO.          KIND    DATE          APPLICATION NO.          DATE
      ---------------     ----    --------      --------------------     --------
PI    US 4404012           A      19830913      US 1981-255937           19810420 <--
      AU 8171215           A      19811210      AU 1981-71215            19810601 <--
      AU 545949            B2     19850808
      BR 8103446           A      19820224      BR 1981-3446             19810601 <--
      ZA 8103676           A      19820630      ZA 1981-3676             19810602 <--
AB    .  .  .  etc.) prepared by several methods were applied to the sugarcane
      foliage 2-4 wk before the 1st harvest to increase the sugar
      yield.  Thus, the effectiveness of I was demonstrated with a 2% organic
solution
      of 2-(5-isopropyl-5-methyl-4-oxo-2-imidazolin-2-yl)nicotine acid (I; R1 =
      Me, R2 = CHMe2, R3 = O, R4R7 = H, R8 = CO2H)  [81334-34-1] prepared by the
      hydrolysis of Me 2-(2-isopropyl-5-methyl-4-oxo-2-
      imidazolinyl)nicotinate  [81333-51-9], applied to johnson grass plants in
      the greenhouse which 8 days after treatment exuded a sugar solution
      in droplets along the plant stem.
ST    imidazolinylpyridine prepn sugar enhancer sugarcane
IT    Carbohydrates and Sugars, biological studies
      RL: BIOL (Biological study)
         (enhancement of, in sugarcane, imidazolinylpyridines for)
IT    Plant hormones and regulators
      RL: BIOL (Biological study)
         (imidazolinylpyridines, for sugar yield enhancement in
         sugarcane)
IT    81334-46-5P   81334-47-6P   81334-48-7P   81334-49-8P   81334-50-1P
      RL: RCT (Reactant); SPN (Synthetic preparation); PREP
      (Preparation); RACT (Reactant or reagent)
         (preparation and chlorination-amidation of)
IT    81333-43-9P   81333-44-0P   81333-45-1P   81333-46-2P   81334-44-3P
      81334-45-4P   81334-53-4P   81334-54-5P   81334-55-6P   81334-56-7P
      RL: RCT (Reactant); SPN (Synthetic preparation); PREP
      (Preparation); RACT (Reactant or reagent)
         (preparation and cyclization of)
IT    81335-05-9P
      RL: SPN (Synthetic preparation); PREP (Preparation)
         (preparation and deacetyltion of)
IT    81334-82-9P
      RL: RCT (Reactant); SPN (Synthetic preparation); PREP
      (Preparation); RACT (Reactant or reagent)
         (preparation and deprotection-carboxylation of)
IT    81333-33-7P   81333-34-8P   81333-35-9P   81333-36-0P   81333-37-1P
      81333-38-2P   81333-39-3P   81333-40-6P   81333-41-7P   81333-42-8P
      RL: RCT (Reactant); SPN (Synthetic preparation); PREP
      (Preparation); RACT (Reactant or reagent)
         (preparation and hydrolysis of)
IT    81333-47-3P   81333-48-4P   81333-49-5P   81333-50-8P
      RL: RCT (Reactant); SPN (Synthetic preparation); PREP
      (Preparation); RACT (Reactant or reagent)
         (preparation and reaction with methanol and sodium hydride)
```

IT 81334-57-8P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation and reaction with methyllithium and **carbon dioxide**)
IT 81342-34-9P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation and silylation of)
IT 81333-51-9P 81333-53-1P
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(preparation and **sugar** yield enhancement in sugarcane)
IT 81334-29-4P 81334-34-1P 81334-38-5P 81335-07-1P 81510-83-0P
91264-16-3P
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(preparation and **sugar** yield enhancement in sugarcane by)
IT 81333-52-0P
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(preparation of)
IT 81333-65-5P
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(preparation of and **sugar** yield enhancing by, in sugarcane)
IT 81333-75-7P 81334-31-8P 81334-35-2P 81334-36-3P 81334-37-4P
81334-39-6P 81334-41-0P 81334-43-2P 81334-58-9P 81334-59-0P
81334-61-4P 81334-62-5P 81334-63-6P 81334-64-7P 81334-65-8P
81334-66-9P 81334-67-0P 81334-68-1P 81334-69-2P 81334-70-5P
81334-71-6P 81334-72-7P 81334-73-8P 81334-74-9P 81334-75-0P
81334-76-1P 81334-77-2P 81334-78-3P 81334-79-4P 81334-80-7P
81334-81-8P 81342-33-8P 81342-93-0P 81342-94-1P 81342-95-2P
81361-67-3P 81510-44-3P 104098-48-8P
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(preparation of, as **sugar** yield enhancer for sugarcane)
IT 81334-22-7P 81334-30-7P 81334-83-0P 81334-84-1P 81334-85-2P
81334-86-3P 81334-87-4P 81334-88-5P 81334-89-6P 81334-90-9P
81334-91-0P 81334-92-1P 81334-93-2P 81334-94-3P 81334-95-4P
81334-96-5P 81334-97-6P 81334-98-7P 81334-99-8P 81335-00-4P
81335-01-5P 81335-02-6P 81335-03-7P 81335-04-8P 81335-06-0P
81335-09-3P 81335-10-6P 81335-11-7P 81335-12-8P 81335-13-9P
81335-14-0P 81335-15-1P 81335-16-2P 81335-17-3P 81335-20-8P
81335-21-9P 81335-22-0P 81335-76-4P 81335-78-6P 81510-49-8P
81510-50-1P 91535-74-9P
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(preparation of, as **sugar** yield enhancer in sugarcane)
IT 81333-51-9P 81333-54-2P 81333-55-3P 81333-56-4P 81333-57-5P
81333-58-6P 81333-59-7P 81333-60-0P 81333-61-1P 81333-62-2P
81333-63-3P 81333-64-4P 81333-66-6P 81333-67-7P 81333-68-8P
81333-69-9P 81333-70-2P 81333-71-3P 81333-72-4P 81333-73-5P
81333-74-6P 81333-76-8P 81333-77-9P 81333-78-0P 81333-79-1P
81333-80-4P 81333-81-5P 81333-82-6P 81333-83-7P 81333-84-8P
81333-85-9P 81333-86-0P 81333-87-1P 81333-88-2P 81333-89-3P
81333-90-6P 81333-91-7P 81333-92-8P 81333-93-9P 81333-94-0P
81333-95-1P 81333-96-2P 81333-97-3P 81333-98-4P 81333-99-5P
81334-00-1P 81334-01-2P 81334-02-3P 81334-03-4P 81334-04-5P
81334-05-6P 81334-06-7P 81334-07-8P 81334-08-9P 81334-09-0P
81334-10-3P 81334-11-4P 81334-12-5P 81334-13-6P 81334-15-8P
81334-16-9P 81334-17-0P 81334-18-1P 81334-19-2P 81334-20-5P
81334-21-6P 81334-22-7P 81334-23-8P 81334-24-9P 81334-27-2P

81334-28-3P 81342-31-6P 81342-32-7P 91282-38-1P
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(preparation of, as **sugar** yield enhancer, in sugarcane)

L3 ANSWER 54 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1983:590232 CAPLUS
DOCUMENT NUMBER: 99:190232
TITLE: Prebiotic synthesis in atmospheres containing methane, carbon monoxide, and **carbon dioxide**. II. Hydrogen cyanide, formaldehyde and ammonia
AUTHOR(S): Schlesinger, Gordon; Miller, Stanley L.
CORPORATE SOURCE: Dep. Chem., Univ. California, La Jolla, CA, 92093, USA
SOURCE: Journal of Molecular Evolution (**1983**), 19(5), 383-90
CODEN: JMEVAU; ISSN: 0022-2844
DOCUMENT TYPE: Journal
LANGUAGE: English
TI Prebiotic synthesis in atmospheres containing methane, carbon monoxide, and **carbon dioxide**. II. Hydrogen cyanide, formaldehyde and ammonia
SO Journal of Molecular Evolution (**1983**), 19(5), 383-90
CODEN: JMEVAU; ISSN: 0022-2844
AB . . . of urea (0.02-0.63%) based on N were also obtained. The directly synthesized NH3 together with the NH3 obtained from the **hydrolysis** of HCN, nitriles, and urea could have been a major source of NH3 in the atmospheric and oceans of the primitive earth. Prebiotic syntheses from HCN and
H2CO to give products such as purines and **sugars** and some amino acids could have occurred in primitive atms. containing CO and CO2 provided the H2/CO and H2/CO2 ratios. . . .
ST . . . formation prebiotic atm; formaldehyde formation prebiotic atm; ammonia formation prebiotic atm; methane conversion prebiotic evolution; carbon monoxide conversion prebiotic evolution; **carbon dioxide** conversion prebiotic evolution
IT 50-00-0P, biological studies 57-13-6P, biological studies 74-90-8P, biological studies 7664-41-7P, biological studies
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(prebiotic synthesis of, in methane and other atms.)

L3 ANSWER 55 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1982:425913 CAPLUS
DOCUMENT NUMBER: 97:25913
TITLE: **Hydrolysis** of calcium sulfide
INVENTOR(S): Tude, Joao Alberto Lessa; Legey, Jose Carlos Loureiro
PATENT ASSIGNEE(S): NATRON-Consultoria e Projetos S. A., Brazil
SOURCE: Braz. Pedido PI, 13 pp.
CODEN: BPXXDX
DOCUMENT TYPE: Patent
LANGUAGE: Portuguese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
BR 8106761	A	19820216	BR 1981-6761		19811020 <--
PRIORITY APPLN. INFO.:			BR 1981-6761	A	19811020

TI **Hydrolysis** of calcium sulfide
PI BR 8106761 A **19820216**

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
BR 8106761	A	19820216	BR 1981-6761	19811020 <--

AB In the treatment of CaS to obtain H2S by **hydrolysis**, **sugar**, NH4Cl, formic acid, AcOH, EDTA, and salts of the acids are added and the solution carbonated to liberate H2S and. . .
ST calcium sulfide **hydrolysis**; **sugar** **hydrolysis** calcium sulfide; EDTA **hydrolysis** calcium sulfide; acetic acid reaction calcium sulfide
IT 20548-54-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(**hydrolysis** of, with **carbon** **dioxide**)
IT 7783-06-4P, preparation
RL: IMF (Industrial manufacture); **PREP** **(Preparation)**
(manufacture of, by calcium sulfide **hydrolysis** with **carbon** **dioxide**)

L3 ANSWER 56 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1981:515322 CAPLUS
DOCUMENT NUMBER: 95:115322
TITLE: Carboxylic acid derivatives and medicaments containing them
INVENTOR(S): Griss, Gerhart; Sauter, Robert; Grell, Wolfgang; Hurnaus, Rudolf; Rupprecht, Eckhard; Kaubisch, Nikolaus; Kaehling, Joachim; Eisele, Bernhard; Piper, Helmut; Noll, Klaus
PATENT ASSIGNEE(S): Thomae, Dr. Karl, G.m.b.H., Fed. Rep. Ger.
SOURCE: Eur. Pat. Appl., 271 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 23569	A1	19810211	EP 1980-103670	19800628 <--
EP 23569	B1	19830622		
R: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE				
DE 2928352	A1	19810115	DE 1979-2928352	19790713 <--
DE 2949259	A1	19810611	DE 1979-2949259	19791207 <--
DE 3016650	A1	19811105	DE 1980-3016650	19800430 <--
DE 3016651	A1	19811105	DE 1980-3016651	19800430 <--
EP 63826	A2	19821103	EP 1982-104991	19800628 <--
EP 63826	A3	19821229		
EP 63826	B1	19841205		
R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
AT 3862	T	19830715	AT 1980-103670	19800628 <--
AT 10632	T	19841215	AT 1982-104991	19800628 <--
AU 8060362	A	19810115	AU 1980-60362	19800711 <--
AU 535924	B2	19840412		
HU 27876	A2	19831128	HU 1983-1085	19800711 <--
HU 186675	B	19850930	HU 1980-1085	19800711 <--
ES 493608	A2	19811216	ES 1980-493608	19800721 <--
ES 502454	A3	19820716	ES 1981-502454	19810523 <--

ES 516258	A5	19840307	ES 1982-516258	19821006 <--
NO 8403735	A	19810114	NO 1984-3735	19840919 <--

PRIORITY APPLN. INFO.:

DE 1979-2928352	A	19790713
DE 1979-2949259	A	19791207
DE 1980-3016650	A	19800430
DE 1980-3016651	A	19800430
DE 1976-2605790		19760213
US 1979-59401	A	19790720
EP 1980-103670	A	19800628
EP 1982-104991		19800628
JP 1981-159503	A	19811008

OTHER SOURCE(S): CASREACT 95:115322; MARPAT 95:115322

PI EP 23569 **19810211**

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 23569	A1	19810211	EP 1980-103670	19800628 <--
	EP 23569	B1	19830622		
	R: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE				
	DE 2928352	A1	19810115	DE 1979-2928352	19790713 <--
	DE 2949259	A1	19810611	DE 1979-2949259	19791207 <--
	DE 3016650	A1	19811105	DE 1980-3016650	19800430 <--
	DE 3016651	A1	19811105	DE 1980-3016651	19800430 <--
	EP 63826	A2	19821103	EP 1982-104991	19800628 <--
	EP 63826	A3	19821229		
	EP 63826	B1	19841205		
	R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
	AT 3862	T	19830715	AT 1980-103670	19800628 <--
	AT 10632	T	19841215	AT 1982-104991	19800628 <--
	AU 8060362	A	19810115	AU 1980-60362	19800711 <--
	AU 535924	B2	19840412		
	HU 27876	A2	19831128	HU 1983-1085	19800711 <--
	HU 186675	B	19850930	HU 1980-1085	19800711 <--
	ES 493608	A2	19811216	ES 1980-493608	19800721 <--
	ES 502454	A3	19820716	ES 1981-502454	19810523 <--
	ES 516258	A5	19840307	ES 1982-516258	19821006 <--
	NO 8403735	A	19810114	NO 1984-3735	19840919 <--

AB . . . Me), saponification of which gave 83% III (R6 = H). At 5 mg/kg (rats),
III (R = H) lowered blood **sugar** 44, 42, 38, and 35% after 1, 2, 3, and 4 h, resp.

IT Carboxylic acids, preparation
RL: SPN (Synthetic preparation); **PREP** **(Preparation)**
(preparation and use of, as anticholesteremics and hypolipemics)

IT Amides, preparation
RL: SPN (Synthetic preparation); **PREP** **(Preparation)**
(preparation of, and use as antidiabetics)

IT 78253-93-7 78254-50-9 78254-87-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(**hydrolysis** of)

IT 78266-38-3P
RL: SPN (Synthetic preparation); **PREP** **(Preparation)**
(preparation and Fridel-Crafts reaction of, with acetyl chloride)

IT 78253-98-2P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP** **(Preparation)**; RACT (Reactant or reagent)
(preparation and Gatterman reaction of)

IT 78243-84-2P

RL: SPN (Synthetic preparation); **PREP (Preparation)**
(preparation and Gattermann and Sandmeyer reactions of, or diazotization and **hydrolysis** of)

IT 16089-46-6P 78243-64-8P 78243-65-9P 78243-66-0P 78243-67-1P
78243-68-2P 78243-69-3P 78243-71-7P 78243-73-9P 78243-74-0P
78243-75-1P 78243-76-2P 78243-77-3P 78243-78-4P 78243-79-5P
78243-80-8P 78243-81-9P 78243-82-0P 78243-83-1P 78243-85-3P
78243-86-4P 78243-87-5P 78243-88-6P 78243-89-7P 78243-90-0P
78243-91-1P 78243-92-2P 78243-93-3P 78243-94-4P 78243-95-5P
78243-97-7P 78243-98-8P 78243-99-9P 78244-00-5P 78244-01-6P
78244-02-7P 78244-03-8P 78244-04-9P 78251-56-6P 78252-93-4P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation and Gattermann reaction of)

IT 78243-70-6P 78243-72-8P 78243-96-6P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation and Gattermann reaction of, or diazotization and **hydrolysis** of)

IT 77266-76-3P 77266-82-1P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation and Gattermann reaction of, or **hydrolysis** of)

IT 78252-12-7P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation and Sandmeyer reaction of)

IT 78252-09-2P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation and Sandmeyer reaction of, or diazotization and **hydrolysis** of)

IT 15281-91-1P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation and Sandmeyer reaction of, with aniline derivative)

IT 78253-86-8P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation and Willgerodt reaction of, or oxidation with sodium hypobromite)

IT 78253-91-5P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation and acetalization or reaction of, with malonic acid)

IT 78254-01-0P 78254-03-2P
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(preparation and conversion of, to ortho ester)

IT 78253-92-6P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation and decomposition of)

IT 77266-73-0P 77266-81-0P 78243-23-9P 78243-24-0P 78243-25-1P
78243-26-2P 78243-27-3P 78243-28-4P 78243-29-5P 78243-30-8P
78243-31-9P 78243-32-0P 78243-33-1P 78243-34-2P 78243-35-3P
78243-36-4P 78243-37-5P 78243-38-6P 78243-39-7P 78243-40-0P
78243-41-1P 78243-42-2P 78243-43-3P 78243-44-4P 78243-45-5P

78243-46-6P 78243-47-7P 78243-48-8P 78243-49-9P 78243-50-2P
78243-51-3P 78243-52-4P 78243-53-5P 78243-54-6P 78243-55-7P
78243-56-8P 78243-57-9P 78243-58-0P 78243-59-1P 78243-60-4P
78243-61-5P 78251-55-5P 78252-11-6P 78252-95-6P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP**
(Preparation); RACT (Reactant or reagent)
(preparation and hydrogenation of)

IT 78252-99-0P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP**
(Preparation); RACT (Reactant or reagent)
(preparation and hydrogenolysis of)

IT 78253-90-4P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP**
(Preparation); RACT (Reactant or reagent)
(preparation and **hydrolysis** and desulfuration of)

IT 78252-10-5P 78252-13-8P 78252-14-9P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP**
(Preparation); RACT (Reactant or reagent)
(preparation and **hydrolysis** of)

IT 77265-68-0P 77265-73-7P 77265-92-0P 77265-95-3P 77265-97-5P
77266-00-3P 77266-03-6P 77266-06-9P 77266-12-7P 77266-14-9P
77266-15-0P 77266-19-4P 77266-27-4P 77266-33-2P 77266-39-8P
77266-57-0P 78252-36-5P 78252-53-6P 78252-56-9P 78252-65-0P
78253-04-0P 78253-12-0P 78253-40-4P 78253-56-2P 78253-59-5P
78253-62-0P 78254-18-9P 78254-34-9P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); **PREP** **(Preparation)**
(preparation and hypoglycemic activity of)

IT 78254-44-1P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP**
(Preparation); RACT (Reactant or reagent)
(preparation and oxidation of, with silver oxide)

IT 78251-62-4P 78253-03-9P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP**
(Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with (aminoethyl)benzoate)

IT 78254-49-6P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP**
(Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with Et (aminoethyl)benzoate)

IT 77265-76-0P 77265-78-2P 77265-83-9P 77265-86-2P 77265-95-3P
77266-83-2P 77275-67-3P 78252-32-1P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP**
(Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with Me (aminoethyl)benzoate)

IT 78254-00-9P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP**
(Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with butyllithium and **carbon dioxide**)

IT 78243-62-6P 78251-57-7P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP**
(Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with carbonyldiimidazole and Et benzoate derivative)

IT 77265-94-2P 77265-99-7P 77266-02-5P 77266-05-8P 77266-08-1P

77266-18-3P 77266-23-0P 77266-26-3P 77266-29-6P 77266-32-1P
77266-35-4P 77266-38-7P 77266-44-5P 77266-47-8P 77266-50-3P
77266-53-6P 78244-07-2P 78244-09-4P 78251-58-8P 78251-78-2P
78251-79-3P 78251-80-6P 78251-83-9P 78251-84-0P 78251-85-1P
78251-86-2P 78251-87-3P 78251-88-4P 78251-89-5P 78251-90-8P
78251-91-9P 78251-92-0P 78251-93-1P 78251-96-4P 78251-97-5P
78251-98-6P 78251-99-7P 78252-01-4P 78252-02-5P 78252-03-6P
78252-04-7P 78252-05-8P 78252-06-9P 78252-15-0P 78252-22-9P
78252-23-0P 78252-24-1P 78252-25-2P 78252-26-3P 78252-27-4P
78252-28-5P 78252-29-6P 78252-30-9P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP**
(Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with carbonyldiimidazole and
aminoethylbenzoate)

IT 77275-68-4P 78251-94-2P 78251-95-3P 78252-00-3P 78252-21-8P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP**
(Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with carbonyldiimidazole and
aminoethylbenzoate, and anticholesteremic and hypolipemic activity of)

IT 78244-08-3P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP**
(Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with carbonyldiimidazole and aminoxybenzoate)

IT 78253-74-4P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP**
(Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with cyclohexanol)

IT 77266-75-2P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP**
(Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with hydroxypiperidine)

IT 77266-74-1P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP**
(Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with methyl(aminoethyl)benzoate)

IT 78251-85-1P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP**
(Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with thionyl chloride and Et
(aminoethyl)benzoate)

IT 78253-83-5P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP**
(Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with thionyl chloride, oxidation of, and
hypoglycemic activity of)

IT 78252-69-4P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP**
(Preparation); RACT (Reactant or reagent)
(preparation and reactions of, and hypoglycemic activity of)

IT 78253-97-1P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP**
(Preparation); RACT (Reactant or reagent)
(preparation and reduction of)

IT 77266-67-2P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP**
(Preparation); RACT (Reactant or reagent)
(preparation and saponification and ethanolysis of)

IT 77266-20-7P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation and saponification and hydrogenation of)
IT 77266-60-5P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation and saponification and N-acetylation of)
IT 77265-64-6P 77265-71-5P 77265-74-8P 77265-77-1P 77265-79-3P
77265-82-8P 77265-84-0P 77265-87-3P 77265-91-9P 77265-98-6P
77266-01-4P 77266-04-7P 77266-07-0P 77266-09-2P 77266-13-8P
77266-17-2P 77266-22-9P 77266-25-2P 77266-28-5P 77266-31-0P
77266-34-3P 77266-37-6P 77266-40-1P 77266-43-4P 77266-46-7P
77266-49-0P 77266-52-5P 77266-55-8P 77266-59-2P 77266-62-7P
77266-64-9P 77266-71-8P 77266-77-4P 77266-79-6P 77266-85-4P
78251-60-2P 78251-64-6P 78251-67-9P 78251-69-1P 78251-71-5P
78251-73-7P 78251-75-9P 78252-33-2P 78252-34-3P 78252-35-4P
78252-37-6P 78252-39-8P 78252-42-3P 78252-44-5P 78252-46-7P
78252-49-0P 78252-51-4P 78252-54-7P 78252-57-0P 78252-58-1P
78252-60-5P 78252-62-7P 78252-66-1P 78252-70-7P 78252-72-9P
78252-74-1P 78252-76-3P 78252-78-5P 78252-80-9P 78252-82-1P
78252-84-3P 78252-86-5P 78252-89-8P 78252-92-3P 78252-96-7P
78253-02-8P 78253-05-1P 78253-07-3P 78253-09-5P 78253-11-9P
78253-13-1P 78253-16-4P 78253-18-6P 78253-20-0P 78253-22-2P
78253-24-4P 78253-26-6P 78253-28-8P 78253-30-2P 78253-32-4P
78253-36-8P 78253-38-0P 78253-41-5P 78253-43-7P 78253-46-0P
78253-49-3P 78253-51-7P 78253-53-9P 78253-55-1P 78253-57-3P
78253-60-8P 78253-63-1P 78253-66-4P 78253-67-5P 78253-70-0P
78253-72-2P 78253-73-3P 78254-15-6P 78254-17-8P 78254-20-3P
78254-22-5P 78254-24-7P 78254-25-8P 78254-26-9P 78254-35-0P
78254-37-2P 78254-46-3P 78266-31-6P 78266-36-1P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation and saponification of)
IT 77265-93-1P
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(preparation and saponification of and hypoglycemic activity of)
IT 77266-84-3P 78252-64-9P 78252-68-3P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation and saponification of, and hypoglycemic activity of)
IT 78253-14-2P 78253-35-7P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation and saponification or hydrogenation of)
IT 78254-54-3P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation and N-alkylation of, by Et (bromoethyl)benzoate)
IT 78254-52-1P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation and N-arylation by, of piperidine)
IT 77265-69-1P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation and N-methylation of)

IT 78252-16-1P 78252-18-3P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation and O-alkylation of)

IT 78252-17-2P 78252-19-4P 78252-20-7P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation and O-methylation of)

IT 77266-16-1P 77266-21-8P 77266-24-1P 77266-30-9P 77266-36-5P
77266-42-3P 77266-45-6P 77266-48-9P 77266-51-4P 77266-54-7P
77266-58-1P 77266-61-6P 77266-63-8P 77266-66-1P 77266-70-7P
77266-72-9P 77266-78-5P 77266-80-9P 78251-59-9P 78251-63-5P
78251-66-8P 78251-68-0P 78251-70-4P 78251-72-6P 78251-74-8P
78251-77-1P 78251-81-7P 78251-82-8P 78252-07-0P 78252-38-7P
78252-41-2P 78252-43-4P 78252-45-6P 78252-48-9P 78252-50-3P
78252-59-2P 78252-61-6P 78252-63-8P 78252-67-2P 78252-71-8P
78252-73-0P 78252-75-2P 78252-77-4P 78252-79-6P 78252-81-0P
78252-83-2P 78252-85-4P 78252-88-7P 78252-91-2P 78252-94-5P
78252-98-9P 78253-01-7P 78253-06-2P 78253-08-4P 78253-10-8P
78253-15-3P 78253-17-5P 78253-19-7P 78253-21-1P 78253-23-3P
78253-25-5P 78253-27-7P 78253-29-9P 78253-31-3P 78253-34-6P
78253-37-9P 78253-42-6P 78253-45-9P 78253-48-2P 78253-50-6P
78253-52-8P 78253-54-0P 78253-55-1P 78253-65-3P 78253-69-7P
78253-75-5P 78253-76-6P 78253-77-7P 78253-78-8P 78253-79-9P
78253-80-2P 78253-81-3P 78253-82-4P 78253-84-6P 78253-88-0P
78253-89-1P 78253-94-8P 78253-95-9P 78253-96-0P 78253-99-3P
78254-02-1P 78254-04-3P 78254-05-4P 78254-07-6P 78254-08-7P
78254-09-8P 78254-10-1P 78254-11-2P 78254-12-3P 78254-13-4P
78254-14-5P 78254-19-0P 78254-28-1P 78254-30-5P 78254-31-6P
78254-32-7P 78254-33-8P 78254-36-1P 78254-38-3P 78254-39-4P
78254-41-8P 78254-43-0P 78254-45-2P 78254-48-5P 78254-53-2P
78255-45-5P 78255-46-6P 78255-47-7P 78266-32-7P 78266-33-8P
78266-34-9P 78266-37-2P
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(preparation of)

L3 ANSWER 57 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1966:492924 CAPLUS
DOCUMENT NUMBER: 65:92924
ORIGINAL REFERENCE NO.: 65:17414d-e
TITLE: The effect of various inorganic nitrogen sources on the **carbon dioxide** output and keto acid production by mats of Fusarium oxysporum
AUTHOR(S): Said, H.; Harhash, A. W.
CORPORATE SOURCE: Univ. Cairo
SOURCE: Acta Biologica et Medica Germanica (**1966**), 17(2), 127-34
CODEN: ABMGAJ; ISSN: 0001-5318
DOCUMENT TYPE: Journal
LANGUAGE: English

TI The effect of various inorganic nitrogen sources on the **carbon dioxide** output and keto acid production by mats of Fusarium oxysporum

SO Acta Biologica et Medica Germanica (**1966**), 17(2), 127-34
CODEN: ABMGAJ; ISSN: 0001-5318

AB Spores or fungal mats of F. oxysporum **hydrolyzed** sucrose in the culture medium prior to its absorption. The rate of sucrose inversion was

greater than the rate of **sugar** absorption, and consequently, reducing **sugars** accumulated in the medium. No enzyme was detected in the culture medium that could invert sucrose after the fungal mats. . . .

IT 127-17-3P, Pyruvic acid 328-50-7P, Glutaric acid, 2-oxo-
RL: **PREP (Preparation)**
(formation of, by Fusarium oxysporum, N source effect on)

L3 ANSWER 58 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1966:440744 CAPLUS
DOCUMENT NUMBER: 65:40744
ORIGINAL REFERENCE NO.: 65:7639h,7640a
TITLE: Assimilation of 14C-labeled **carbon dioxide** by Barlinka grape berries
AUTHOR(S): Meynhardt, J. T.
CORPORATE SOURCE: Fruit Food Technol. Res. Inst., Stellenbosch, S. Afr.
SOURCE: Natl. Conf. Nucl. Energy Appl. Isotopes Radiation, Proc. Pretoria (**1963**) 456-63
DOCUMENT TYPE: Journal
LANGUAGE: English

TI Assimilation of 14C-labeled **carbon dioxide** by Barlinka grape berries

SO Natl. Conf. Nucl. Energy Appl. Isotopes Radiation, Proc. Pretoria (**1963**) 456-63

AB . . . . incorporation of 14C into the fourth C of malic acid indicates that it is mainly formed by a dark reaction. **Sugars** and **sugar** phosphates were highly labeled in the light treatment, most of the label being incorporated into the green berries as opposed to fully mature berries. During the dark treatment, **sugars** and **sugar** phosphates were only slightly labeled. Both light and dark treatments resulted in the production of some highly radioactive free amino acids and some labeling of protein **hydrolyzate** derived amino acids.

IT Grapes
(**carbon dioxide** metabolism by, light effect on)

IT 124-38-9, **Carbon dioxide**
(fixation or metabolism of, by grapes, light effect on)

IT 6915-15-7P, Malic acid
RL: **PREP (Preparation)**
(formation of, by grapes in light vs. dark CO2 fixation)

L3 ANSWER 59 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1966:430370 CAPLUS
DOCUMENT NUMBER: 65:30370
ORIGINAL REFERENCE NO.: 65:5656g-h
TITLE: Fractionation and determination of the organic constituents of black liquors
AUTHOR(S): Monzie-Giullemet, D.; Raoux, H.; Monzie, P.
CORPORATE SOURCE: Fac. Sci., Bordeaux
SOURCE: Chim. Biochim. Lignine, Cellulose Hemicelluloses, Actes Symp. Intern., Grenoble, France (**1964**) 191-211
DOCUMENT TYPE: Journal
LANGUAGE: French

SO Chim. Biochim. Lignine, Cellulose Hemicelluloses, Actes Symp. Intern., Grenoble, France (**1964**) 191-211

AB Determination of the polyosidic fraction of black liquor required elimination of

salts prior to **hydrolysis.** The method described reduces **sugar** losses and simplifies manipulations. The precipitation of hemicelluloses was found never to be quant., the degree of recovery varying from. . .

IT **Sugars**
(analysis, chromatographic, for paper pulping kraft black liquor)

IT **Carbohydrates**
(determination in paper pulping kraft black liquors and copptn. with lignin)

IT **Polysaccharides**
(in paper pulping kraft black liquors and their determination)

IT 124-38-9, **Carbon dioxide** 7783-06-4, Hydrogen sulfide (H2S)
(removal of, from paper pulping kraft black liquors)

IT 64-19-7P, Acetic acid
RL: **PREP (Preparation)**
(separation from paper pulping kraft black liquor and determination of)

L3 ANSWER 60 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1966:430368 CAPLUS
DOCUMENT NUMBER: 65:30368
ORIGINAL REFERENCE NO.: 65:5656c-f
TITLE: Fundamental study of the chemistry of sulfate cooks. I.Fractionation and quantitative determination of the components of black liquors
AUTHOR(S): Monzie-Guillemet, D.; Raoux, H.; Monzie, P.
SOURCE: Techniques et Recherches Papetieres (**1966**), No. 7, 37-48
CODEN: TQRPAB; ISSN: 0372-1035
DOCUMENT TYPE: Journal
LANGUAGE: French

SO Techniques et Recherches Papetieres (**1966**), No. 7, 37-48
CODEN: TQRPAB; ISSN: 0372-1035

AB . . . of a kraft cook of pinewood contained 50-60 g./l. of lignin (I), which was approx. 10-15 times the amts. of **polysaccharides** present. The liquors also contained appreciable amts. of salts of organic acids. Whereas little space is devoted to I, the separation of which presented fewer difficulties, an attempt was made to determine quant. the **carbohydrates** and the organic acids present. The black liquor, brought to pH 3 at 20° by means of acid, yielded I as a precipitate that retained as much as 35-45% of the total **polysaccharides**, which apparently were copptd. Difficulties were experienced in removing salts from the black liquor, and the best method of removing. . . After filtering off the Amberlite and washing the residue, a filtrate was obtained that caused little precipitation of I or **carbohydrates.** I was removed from this filtrate by a mild chlorite bleach (at 20° for 18 hrs.) followed by precipitation with EtOH. In this way, the **polysaccharides** could be determined However it was best to **hydrolyze** the filtrate + washings with aqueous H2SO4, and to sep. the individual **sugars** chromatographically, or to determine them completely by the Somogyi method (CA 46, 4955f). The organic acids were separated by treating. . . acid were determined by gas chromatography. Various saccharinic acids were also identified chromatographically. Apparently the copptn. of I and the **carbohydrates** is not due to an initial complex of these 2 wood components. 25 references.

IT **Sugars**
(analysis, chromatographic, for paper pulping kraft black liquor)

IT **Carbohydrates**
(determination in paper pulping kraft black liquors and copptn. with lignin)
IT **Polysaccharides**
(in paper pulping kraft black liquors and their determination)
IT 2554-46-3P, Pyrazol-5-ol, 4-mercapto-3-methyl-1-phenyl-, 4-carbamate
RL: **PREP (Preparation)**
(preparation of)
IT 124-38-9, **Carbon dioxide** 7783-06-4, Hydrogen sulfide
(H_2S)
(removal of, from paper pulping kraft black liquors)
IT 64-19-7P, Acetic acid
RL: **PREP (Preparation)**
(separation from paper pulping kraft black liquor and determination of)
IT 64-18-6P, Formic acid
RL: **PREP (Preparation)**
(separation of, from paper pulping kraft black liquor and determination of)

L3 ANSWER 61 OF 98 CAPLUS

ACCESSION NUMBER: 1966:89790 CAPLUS
DOCUMENT NUMBER: 64:89790
ORIGINAL REFERENCE NO.: 64:16876h,16877a-b
TITLE: Energy transport in **carbohydrates.** III. Chemical effects of γ-radiation on the cycloamyloses
AUTHOR(S): Phillips, G. O.; Young, M.
CORPORATE SOURCE: Univ. Coll., Cardiff, UK
SOURCE: Journal of the Chemical Society [Section] A: Inorganic, Physical, Theoretical (**1966**), (4), 383-7
CODEN: JCSIAP; ISSN: 0022-4944
DOCUMENT TYPE: Journal
LANGUAGE: English
TI Energy transport in **carbohydrates.** III. Chemical effects of γ-radiation on the cycloamyloses
SO Journal of the Chemical Society [Section] A: Inorganic, Physical, Theoretical (**1966**), (4), 383-7
CODEN: JCSIAP; ISSN: 0022-4944
AB . . . solid cyclohepta-amylose, there is rupture of the cyclic α-1 $\rightarrow$ 4-glycosidic system which does not follow the pattern of acid **hydrolysis.** No glucose is produced, and the products formed initially are maltohexaose and gluconic acid. The gaseous products are H, CO2,. . . + 10-3M), there is a different distribution of products, and cleavage of the cyclic system is more akin to acid **hydrolysis.**
IT 526-95-4P, Gluconic acid 14541-36-7P, Carbon monoxide, dimethyl mercaptole 34620-77-4P, Maltohexaose
RL: **PREP (Preparation)**
(formation of, from cycloheptaamylose by γ-irradiation)
IT 124-38-9P, **Carbon dioxide**
RL: **PREP (Preparation)**
(formation of, from cycloheptaamylose by γ-rays)
IT 1333-74-0P, Hydrogen
RL: **PREP (Preparation)**
(formation or evolution of, from cycloheptaamylose by γ-irradiation)

L3 ANSWER 62 OF 98 CAPLUS

ACCESSION NUMBER: 1965:474250 CAPLUS
DOCUMENT NUMBER: 63:74250
ORIGINAL REFERENCE NO.: 63:13737g,13738a-b
TITLE: The accumulation of **carbohydrate** in Chlorella vulgaris under heterotrophic conditions
AUTHOR(S): Griffiths, D. J.
CORPORATE SOURCE: University Coll. North Wales, Bangor
SOURCE: Annals of Botany (Oxford, United Kingdom) (**1965**), 29(115), 347-57
CODEN: ANBOA4; ISSN: 0305-7364
DOCUMENT TYPE: Journal
LANGUAGE: English

TI The accumulation of **carbohydrate** in Chlorella vulgaris under heterotrophic conditions

SO Annals of Botany (Oxford, United Kingdom) (**1965**), 29(115), 347-57
CODEN: ANBOA4; ISSN: 0305-7364

AB . . . . combined exts. were clarified, freed of EtOH, and their reducing power calculated as equivs. of glucose both before and after **hydrolysis** with 0.4N H_2SO_4. The cell residues were **hydrolyzed** with N H_2SO_4 at 100° for 3 hrs., and extracted with H_2O for half an hr. Other portions of cell residues were held at 100° 2 min. and then **hydrolyzed** with diastase 72 hrs. at 30°. Both sets of exts. were analyzed for reducing **sugars** . Cells of the Emerson strain under heterotrophc conditions (illuminated on a glucose medium) accumulated much more **carbohydrate** than under autotrophic conditions (on a glucose medium without light). Much of this addnl. **carbohydrate** was in the form of starch and other **polysaccharides.** The extent of the accumulation was not related to the size of the cells. The Brannon Number 1 strain also accumulated addnl. **carbohydrate** under heterotrophic conditions. This was shown by the 2 types of **hydrolysis** to be some **polysaccharide** other than starch.

IT Chlorella vulgaris
(CO2 fixation by, effect of **carbohydrates** and light on)

IT Chlorella vulgaris
(**carbohydrate** formation by)

IT Light
(**carbon dioxide** fixation by Chlorella vulgaris after)

IT **Carbohydrates**
Polysaccharides
(formation of, by Chlorella vulgaris)

IT 124-38-9, **Carbon dioxide**
(fixation or metabolism of, by Chlorella vulgaris, effect of **carbohydrates** and light on)

IT 9005-25-8P, Starch
RL: **PREP (Preparation)**
(formation of, by Chlorella vulgaris)

IT 56-41-7P, Alanine
RL: **PREP (Preparation)**
(formation of, by Chlorella vulgaris, light effect on)

IT 56-87-1P, Lysine 74-79-3P, Arginine 6893-26-1P, D-Glutamic acid
RL: **PREP (Preparation)**
(formation of, in CO2 fixation by Chlorella vulgaris, light effect on)

IT 79-14-1P, Glycolic acid
RL: **PREP (Preparation)**

(formation of, in CO2 fixation by Chlorella vulgaris, light effect on)
IT 59-23-4, Galactose
(in **carbon dioxide** fixation by Chlorella vulgaris,
light in relation to)
IT 50-99-7, D-Glucose 57-48-7, Fructose
(in **carbon dioxide** metabolism by Chlorella
vulgaris, light in relation to)

L3 ANSWER 63 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1965:440921 CAPLUS
DOCUMENT NUMBER: 63:40921
ORIGINAL REFERENCE NO.: 63:7386h,7387a
TITLE: Metabolism of radioiodine by Chlorella vulgaris
AUTHOR(S): Anghileri, Leopoldo J.
SOURCE: Arg., Rep., Com. Nacl. Energia At., Inform. (**1965**), No. 132, 11 pp.
DOCUMENT TYPE: Journal
LANGUAGE: Spanish
SO Arg., Rep., Com. Nacl. Energia At., Inform. (**1965**), No. 132, 11
pp.
AB . . . vulgaris in the light, more than half was present as
intracellular iodide. Labeled mono- and diiodotyrosine were identified in
the **hydrolyzate** of the protein material, along with a third
radioactive peak. Most of the isotope in the lipid material was found. .
.
IT Light
(**carbon dioxide** fixation by Chlorella vulgaris
after)
IT 124-38-9, **Carbon dioxide**
(fixation or metabolism of, by Chlorella vulgaris, effect of
carbohydrates and light on)
IT 27380-65-0P, Tyrosine, iodo- 28553-48-2P, Tyrosine, diiodo-
RL: **PREP (Preparation)**
(formation of, by Chlorella vulgaris)
IT 59-23-4, Galactose
(in **carbon dioxide** fixation by Chlorella vulgaris,
light in relation to)
IT 50-99-7, D-Glucose 57-48-7, Fructose
(in **carbon dioxide** metabolism by Chlorella
vulgaris, light in relation to)

L3 ANSWER 64 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1965:25848 CAPLUS
DOCUMENT NUMBER: 62:25848
ORIGINAL REFERENCE NO.: 62:4646e-g
TITLE: Acidoid behavior of charcoal as a function of its oxygen complexes. VI. Adsorption of ammonia
AUTHOR(S): Puri, Balwant Rai; Mahajan, O. P.
SOURCE: J. Indian Chem. Soc. (**1964**), 4(8), 586-90
DOCUMENT TYPE: Journal
LANGUAGE: English
SO J. Indian Chem. Soc. (**1964**), 4(8), 586-90
AB The effect of the nature of the surface of **sugar** charcoal on the
adsorption of ammonia in solution or the gaseous phase was investigated. The
surface of the charcoal was. . . . 2 distinct reactions. The first
reaction is neutralization involving an acidic CO2 complex. The adsorbed
NH3 can be recovered on **hydrolysis** with HCl or NaOH. The 2nd

reaction involves the fixation of N in a non-**hydrolyzable** form
and cannot be attributed to any surface group postulated thus far. Both
reactions are temperature dependent.

IT 121-44-8P, Triethylamine 124-40-3P, Dimethylamine
RL: **PREP (Preparation)**
(adsorption by charcoal, acidic CO2 surface complex formation and)

IT 7664-41-7P, Ammonia
RL: **PREP (Preparation)**
(adsorption of, by charcoal, CO2 acidic surface complex formation and)

IT 109-73-9P, Butylamine 109-89-7P, Diethylamine
RL: **PREP (Preparation)**
(adsorption of, by charcoal, acidic CO2 surface complex formation and)

IT 124-38-9, **Carbon dioxide**
(complex (acidic surface), with charcoal, NH3 adsorption and)

L3 ANSWER 65 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1964:442243 CAPLUS
DOCUMENT NUMBER: 61:42243
ORIGINAL REFERENCE NO.: 61:7379e-f
TITLE: Effect of potassium on efflux of assimilates and **carbohydrate** metabolism in wheat shoots
AUTHOR(S): Leont'eva, A. N.
SOURCE: Uch. Zap., Gor'kovsk. Gos. Univ. (**1963**), (63), 82-5
From: Ref. Zh., Biol. 1964, Abstr. No. 6G40.
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

TI Effect of potassium on efflux of assimilates and **carbohydrate**
metabolism in wheat shoots

SO Uch. Zap., Gor'kovsk. Gos. Univ. (**1963**), (63), 82-5
From: Ref. Zh., Biol. 1964, Abstr. No. 6G40.

AB . . . 20 min. The above -ground parts and the roots were fixed sep.
after exposure to light for 30 min. Free **sugars** were separated
chromatographically and radioactivity was determined The efflux of assimilates
into the roots of plants receiving K was more. . . content of labeled
monosaccharides in the roots as the result of consumption of sucrose by
respiration, secondary synthetic processes, and **hydrolysis.** The
fact that the amount of incorporated 14C was highest in the 24-hr.
hydrolysis fraction indicates that the rate of protein synthesis
was increased. K resulted in an increase in the radioactivity of the. . .

IT Wheat
(**carbon dioxide** metabolism by, K effect on)

IT **Sugars**
(metabolism of, by wheat, K effect on)

IT 124-38-9, **Carbon dioxide**
(fixation or metabolism of, by wheat, K effect on)

IT 57-50-1P, Sucrose
RL: **PREP (Preparation)**
(formation of, by wheat, K effect on)

IT 9004-34-6P, Cellulose
RL: **PREP (Preparation)**
(formation of, in wheat, K effect on)

IT 7440-09-7, Potassium
(in **carbon dioxide** fixation by wheat)

L3 ANSWER 66 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1964:412136 CAPLUS
DOCUMENT NUMBER: 61:12136
ORIGINAL REFERENCE NO.: 61:2047e-g
TITLE: A comparative study of the pulps obtained from okoume wood and various commercial pulps, as well as changes occurring on aging
AUTHOR(S): Savard, J.; Andre, A. M.
CORPORATE SOURCE: Div. Chim. Centre Tech. Forestier Trop., Nogent-sur-Marne, Fr.
SOURCE: Assoc. Tech. Ind. Papetiere, Bull (**1963**), 17(5), 322-36
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

SO Assoc. Tech. Ind. Papetiere, Bull (**1963**), 17(5), 322-36

AB . . . an unbleached bisulfite pulp was also bleached with ClO2 to 89% brightness. Analyses were made on all pulps for extractives, **sugars** determined chromatographically after **hydrolysis**, cellulose (according to Kuerschner, followed by a correction), Klason lignin, and reducing values obtained by Bertrand's method. Summations (of selected. . . amount of CO2 released in the Le Fevre-Tollens reaction that did not originate from the uronic acid or from the **sugars** formed on **hydrolysis** increased markedly on aging.

IT 124-38-9P, **Carbon dioxide**
RL: **PREP (Preparation)**
(formation of, in paper pulps from Aucoumea wood on aging)

L3 ANSWER 67 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1964:77052 CAPLUS
DOCUMENT NUMBER: 60:77052
ORIGINAL REFERENCE NO.: 60:13583h,13584a-d
TITLE: Distribution of 14C and its incorporation into fructose polymers after photosynthesis by Helianthus tuberosus
AUTHOR(S): Popov, K.; Edelman, Dzh.
SOURCE: Izv. Inst. po Biol. "Metodii Popov" Bulgar. Akad. Nauk. (**1963**), 13, 37-61
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

SO Izv. Inst. po Biol. "Metodii Popov" Bulgar. Akad. Nauk. (**1963**), 13, 37-61

AB . . . min., and the extract concentrated to a small volume Radioactivity is determined
by planchet counting, autoradiographs, and identification of the **sugars** and fructose polymers after paperchromatographic separation About 70% of the total activity is recovered in the extract (approx. 12,200,000 counts/min.),. . . phloem contain very little of higher labeled fructosides, but labeled sucrose is well distributed. The incorporation of newly synthetized 14C-labeled **sugars** of the fructose polymers was studied after acid and enzymic **hydrolysis** of the tuber extract For acid **hydrolysis** the extract was heated with oxalic acid (one part extract with 9 parts of 5.5% oxalic acid) and for the enzymic **hydrolysis** with a tuber preparation of β,β fructofuranosidase, which catalyzes the cleavage of the fructose-fructose bond without affecting the glucose-fructose bond. The enzyme was obtained in 0.5% yield from tubers kept in moist sand at 2° for 6 weeks. Complete **hydrolysis** of the tri-, tetra-, and hexasaccharides was obtained after incubation for 15-20 hrs. After enzymic **hydrolysis**

, the intramol. distribution of 14C was found mainly in sucrose. The enzymic **hydrolysis** of the active pentasaccharides results in the liberation of active glucose sucrose fructose, and small amts. of active tri- and. . .

IT 124-38-9P, **Carbon dioxide**
RL: **PREP (Preparation)**
(fixation or metabolism of, by Jerusalem artichoke, fructoside formation and)

IT 9005-80-5P, Inulin
RL: **PREP (Preparation)**
(formation of, by Jerusalem artichoke during photosynthesis)

IT 57-50-1P, Sucrose
RL: **PREP (Preparation)**
(formation of, by Jerusalem artichoke, CO2 in)

IT 57-48-7P, Fructose
RL: **PREP (Preparation)**
(polymers of, formation by Jerusalem artichoke, CO2 in)

L3 ANSWER 68 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1964:53563 CAPLUS
DOCUMENT NUMBER: 60:53563
ORIGINAL REFERENCE NO.: 60:9468c-e
TITLE: Effect of gamma irradiation upon cellulose
AUTHOR(S): Horio, Masao; Imamura, Rikizo; Mizukami, Hideya
CORPORATE SOURCE: Univ. Kyoto, Japan
SOURCE: Bulletin of the Institute for Chemical Research, Kyoto University (**1963**), 41(1), 17-38
CODEN: BICRAS; ISSN: 0023-6071
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

SO Bulletin of the Institute for Chemical Research, Kyoto University (**1963**), 41(1), 17-38
CODEN: BICRAS; ISSN: 0023-6071

AB . . . a considerable amount of formic acid ester was found in the irradiated samples. The paper chromatographic analysis showed that the **hydrolyzate** of strongly irradiated cellulose contains an appreciable amount of xylose, arabinose, and glucuronic acid besides glucose, which suggested the transformation of **carbohydrate** components by the irradiation. Hypothetic formulas were given for the transformation.

IT 6556-12-3P, Glucuronic acid
RL: **PREP (Preparation)**
(formation of ascorbic acid and xylulose from, in cellulose by γ-irradiation)

IT 14541-36-7P, Carbon monoxide, dimethyl mercaptole
RL: **PREP (Preparation)**
(formation of, from cellulose (deuterated) by γ-irradiation)

IT 124-38-9P, **Carbon dioxide**
RL: **PREP (Preparation)**
(formation of, from cellulose (deuterated) by γ-rays)

IT 147-81-9P, Arabinose
RL: **PREP (Preparation)**
(formation of, from cellulose by γ-rays)

IT 74-82-8P, Methane
RL: **PREP (Preparation)**
(formation of, from deuterated cellulose by γ-irradiation)

IT 50-99-7P, D-Glucose

RL: **PREP** **(Preparation)**
(formation of, in cellulose by γ-irradiation)
IT 58-86-6P, Xylose
RL: **PREP** **(Preparation)**
(formation of, in cellulose by γ-rays)

L3 ANSWER 69 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1964:24971 CAPLUS
DOCUMENT NUMBER: 60:24971
ORIGINAL REFERENCE NO.: 60:4466g-h,4467a
TITLE: Distribution of carbon-14 in **polysaccharide** after photosynthesis in **carbon** **dioxide** labeled with carbon-14 by Ana-cystis nidulans
AUTHOR(S): Kindel, Paul; Gibbs, Martin
CORPORATE SOURCE: Cornell Univ., Ithaca, NY
SOURCE: Nature (London, United Kingdom) (**1963**), 200(4903), 260-1
CODEN: NATUAS; ISSN: 0028-0836
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
TI Distribution of carbon-14 in **polysaccharide** after photosynthesis in **carbon** **dioxide** labeled with carbon-14 by Ana-cystis nidulans
SO Nature (London, United Kingdom) (**1963**), 200(4903), 260-1
CODEN: NATUAS; ISSN: 0028-0836
AB . . . ml. of boiling 90% EtOH. The solid material was extracted with absolute
EtOH, 20% EtOH, and H2O. The residue was **hydrolyzed** with N HCl for 1.5 hrs. at 100°. The neutralized solution was chromatographed and the effluent evaporated and streaked on. . . C-3 = 86, C-4 = 100, C-5 = 14, C-6 = 18. The pattern of distribution of 14C in glucose **polysaccharide** isolated from both algae was identical at any given time. These results suggest that aldolase is present in algae but is not detected, aldolase is not involved in the conversion of CO2 to **carbohydrate** during photosynthesis, different mechanisms of assimilation of CO2 may exist in both organisms but give rise to the same 14C. . .
IT **Polysaccharides**
(formation of, by Anacystis nidulans and Chlorella pyrenoidosa during photosynthesis)
IT Anacystis nidulans
Chlorella pyrenoidosa
(**polysaccharide** formation by, during photosynthesis)
IT 124-38-9P, **Carbon** **dioxide**
RL: **PREP** **(Preparation)**
(fixation or metabolism of, by Anacystis nidulans and Chlorella pyrenoidosa, **polysaccharide** formation in relation to)

L3 ANSWER 70 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1963:476721 CAPLUS
DOCUMENT NUMBER: 59:76721
ORIGINAL REFERENCE NO.: 59:14304b-c
TITLE: Biochemistry and physiology of galegine in Galega officinalis. III. Arginine as precursor of galegine in G. officinalis
AUTHOR(S): Reuter, G.

CORPORATE SOURCE: Deut. Akad. Wiss., Halle, Germany
SOURCE: Arch. Pharm. (**1963**), 296(8), 516-22
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
SO Arch. Pharm. (**1963**), 296(8), 516-22
AB . . . results indicate that the amidine group of the arginine is transferred as a unit to a preliminary stage of galegine. **Hydrolytic** degradation of the galegine mol. confirms that after application of arginine-amidine-C14 almost the entire radioactivity was found in the amidine. . .
IT 124-38-9P, **Carbon dioxide**
RL: **PREP (Preparation)**
(fixation or metabolism of, by clover and primrose, **carbohydrate** formation in relation to)
IT 543-83-9P, Galegine
RL: **PREP (Preparation)**
(formation of from arginine by Galeqa officinalis, arginine in)
IT 74-79-3P, Arginine 124-38-9P, **Carbon dioxide**
RL: **PREP (Preparation)**
(in galegine formation by Galega officinalis)

L3 ANSWER 71 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1963:464179 CAPLUS
DOCUMENT NUMBER: 59:64179
ORIGINAL REFERENCE NO.: 59:11896g-h,11897a
TITLE: Evidence for a polymeric intermediate in cellulose biosynthesis
AUTHOR(S): Mortimer, D. C.
CORPORATE SOURCE: Natl. Res. Council, Ottawa
SOURCE: Canadian Journal of Botany (**1963**), 41(7), 995-1004
CODEN: CJBOAW; ISSN: 0008-4026
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
SO Canadian Journal of Botany (**1963**), 41(7), 995-1004
CODEN: CJBOAW; ISSN: 0008-4026
AB Results of expts. on C14O2 assimilation by the leaves of **sugar** beet (Beta vulgaris) and barley (Hordeum vulgare) plants growing in soil are given. A 2-min. photosynthetic period was used. Most. . . in a glucosan (II) sufficiently polymerized to precipitate readily and irreversibly from solution The radioactive II is resistant to acid **hydrolysis** but is readily **hydrolyzed** by cellulase. While the total radioactivity of the I fraction does not further increase 10 min. after contact with C14O2. . .
IT Barley
Sugar beets
(**carbon dioxide** fixation by, cellulose formation and)
IT 124-38-9P, **Carbon dioxide**
RL: **PREP (Preparation)**
(fixation or metabolism of, by barley and **sugar** beets, cellulose formation in relation to)
IT 9004-34-6P, Cellulose
RL: **PREP (Preparation)**
(formation of, by barley and **sugar** beet, glucosan in)

L3 ANSWER 72 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1963:48246 CAPLUS
DOCUMENT NUMBER: 58:48246
ORIGINAL REFERENCE NO.: 58:8239a-c
TITLE: Biosynthesis of C14-labeled inulin and fructose-1,6-C14
AUTHOR(S): Zhemchuzhina, A. V.
SOURCE: Metody Polucheniya Radioaktivnykh Preparatov (**1962**) 70-4
CODEN: 13BRAU
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

SO Metody Polucheniya Radioaktivnykh Preparatov (**1962**) 70-4
CODEN: 13BRAU

AB . . . 0.17-0.27, μc./mg. and the yield 2.5% with reference to C14O2. The fructose-1,6-C14 was obtained as follows: 3 g. inulin was **hydrolyzed** for 20 min. in 20 ml. 0.1N H2SO4 at 80°; the solution was neutralized with a cation-exchange resin, evaporated to. . .
50%
with reference to inulin and 1% based on C14O2. The dahlia leaves contained very small amts. of the labeled **carbohydrates.**

IT 124-38-9P, **Carbon dioxide**
RL: **PREP (Preparation)**
(fixation or metabolism of, by dahlias, fructose and inulin formation in relation to)

IT 5160-37-2P, Fructose-1,6-14C2, D-
RL: **PREP (Preparation)**
(formation in dahlias)

IT 9005-80-5P, Inulin
RL: **PREP (Preparation)**
(labeled with 14C, formation in dahlias)

L3 ANSWER 73 OF 98 CAPLUS
ACCESSION NUMBER: 1962:485982 CAPLUS
DOCUMENT NUMBER: 57:85982
ORIGINAL REFERENCE NO.: 57:17204h-i,17205a-b
TITLE: Fate of diethyl pyrocarbonate in wine
AUTHOR(S): Thoukis, George; Bouthilet, R. J.; Ueda, Mas; Caputi, Arthur, Jr.
CORPORATE SOURCE: E. & J. Gallo Winery, Modesto, CA
SOURCE: Am. J. Enol. Viticult. (**1962**), 13, 105-13
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

SO Am. J. Enol. Viticult. (**1962**), 13, 105-13

AB The addition of (Et2OC14)2O (I) to water led to complete **hydrolysis** to EtOH and CO2, but in wine at pH 3.3 only 97-98% of the C14O2 was recoverable as volatile material.. . . stable in wine at pH 3.3 but not at pH 1.0 may be the result of the formation of a **hydrolyzable** complex with constituents similar to tannic acid or the formation of Et carbamate from NH4+. Organic acids, **sugars**, EtOH, amino acids, or higher alcs. do not appear to be involved in production of such a residue from I. . .

IT 124-38-9P, **Carbon dioxide**
RL: **PREP (Preparation)**
(formation of, from diethyl pyrocarbonate decomposition in wine)

IT 64-17-5P, Ethyl alcohol
RL: **PREP (Preparation)**
(formation of, in diethyl pyrocarbonate decomposition in wine)

IT   4596-51-4P, Glycine, N-carboxy-, N-ethyl ester
      RL: **PREP** **(Preparation)**
         (preparation of)

L3   ANSWER 74 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1962:80977 CAPLUS
DOCUMENT NUMBER: 56:80977
ORIGINAL REFERENCE NO.: 56:15839d-f
TITLE: Effects of internal and external factors on photosynthetic C14O2 fixation in general and on formation of maltose-C14 in Acer leaf in particular
AUTHOR(S): Nishida, K.
CORPORATE SOURCE: Univ. Kanazawa, Japan
SOURCE: Physiologia Plantarum (**1962**), 15, 47-58
CODEN: PHPLAI; ISSN: 0031-9317
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

SO   Physiologia Plantarum (**1962**), 15, 47-58
      CODEN: PHPLAI; ISSN: 0031-9317

AB   . . . CA 54, 3590b. When light of high intensity was applied to rice leaves, C14 was incorporated predominantly in sucrose and **sugar** phosphates and less in amino and organic acids than when placed under weaker light. Addition of NH4NO3 to the nutrient. . . In younger leaves C14 was mainly in the amino acids, especially alanine, whereas in older leaves it went mostly into **sugars.** In maple leaves maltose accounted for 20% of the total activity within 5 min. In terms of leaf age maltose was highest in the oldest leaves. There was evidence that maltose was formed, not through starch **hydrolysis**, but by a direct pathway.

IT   Maple
      Rice
         (**carbon** **dioxide** fixation in, light intensity and)

IT   124-38-9, **Carbon** **dioxide**
         (fixation or metabolism of, by maple and rice, light intensity in relation to)

IT   69-79-4P, Maltose
      RL: **PREP** **(Preparation)**
         (formation of, in maple leaves, light intensity in relation to)

L3   ANSWER 75 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1962:62473 CAPLUS
DOCUMENT NUMBER: 56:62473
ORIGINAL REFERENCE NO.: 56:12017f-i
TITLE: The incorporation of carbon-14 into cellulose and other **polysaccharides** of **sugar** beet leaf during short-term photosynthesis in **carbon** **dioxide**-C14
AUTHOR(S): Mortimer, D. C.; Wylam, Clare B.
CORPORATE SOURCE: Natl. Research Council, Ottawa, Can.
SOURCE: Canadian Journal of Botany (**1962**), 40, 1-11
CODEN: CJBOAW; ISSN: 0008-4026
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

TI   The incorporation of carbon-14 into cellulose and other **polysaccharides** of **sugar** beet leaf during short-term photosynthesis in **carbon** **dioxide**-C14

SO   Canadian Journal of Botany (**1962**), 40, 1-11
      CODEN: CJBOAW; ISSN: 0008-4026

AB A scheme is given for fractionation of the **carbohydrates** of **sugar** beet leaves in EtOH, water, and 3 concns. of KOH. Quant. **hydrolysis** of **polysaccharides** (I) from the water- and alkaline-soluble fractions gave galactose (II), glucose (III), arabinose (IV), xylose (V), ribose (VI), and rhamnose. . . . that in cellulose after 10 sec., but similar in both fractions after longer periods. All of the radioactivity in the **carbohydrates** was in the III, except for some in the fructose (VIII) of sucrose (IX). When photosynthesis in C14O2 was followed. . . . monosaccharides, IV was the most abundant, while II, V, VI, and VII constituted only a minor part of the total **carbohydrates.** Starch appeared to be present in the water-soluble fraction. Hemicellulose fractions are discussed. **Sugars** isolated from the I of plum and oat leaves are considered. 20 references.

IT **Polysaccharides**
(formation of, by **sugar** beet leaf during short term photosynthesis)

IT **Sugar** beets
(**polysaccharide** formation by leaf of, during short term photosynthesis)

IT 124-38-9P, **Carbon dioxide**
RL: **PREP (Preparation)**
(fixation or metabolism of, by **sugar** beet leaf, **polysaccharide** formation in short term photosynthesis in)

IT 50-69-1P, Ribose 57-48-7P, Fructose 57-50-1P, Sucrose 58-86-6P, Xylose 59-23-4P, Galactose
RL: **PREP (Preparation)**
(formation of, by **sugar** beet leaf during short-term photosynthesis)

IT 9004-34-6P, Cellulose
RL: **PREP (Preparation)**
(formation of, in **sugar** beet leaf during short term photosynthesis)

IT 147-81-9P, Arabinose 3615-41-6P, Rhamnose
RL: **PREP (Preparation)**
(formation of, in **sugar** beet leaf during short-term photosynthesis)

L3 ANSWER 76 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER:	1962:20530 CAPLUS
DOCUMENT NUMBER:	56:20530
ORIGINAL REFERENCE NO.:	56:3910c-d
TITLE:	Physiological studies of the rumen protozoan Ophryoscolex caudatus
AUTHOR(S):	Williams, P. P.; Davis, R. E.; Doetsch, R. N.; Gutierrez, J.
CORPORATE SOURCE:	U.S. Dept. of Agr., Beltsvilie, MD, USA
SOURCE:	Applied Microbiology (**1961**), 9, 405-10 CODEN: APMBAY; ISSN: 0003-6919
DOCUMENT TYPE:	Journal
LANGUAGE:	Unavailable

SO Applied Microbiology (**1961**), 9, 405-10
CODEN: APMBAY; ISSN: 0003-6919

AB . . . . products formed from starch included AcOH, butyric acid, lactic acid, CO2, and H. Cellulose was not attacked, although pectin was **hydrolyzed.** The protozoan used cottonseed, soybean, and linseed oil meals, DL-alanine, DL-valine, and DL-leucine with ammonia N as a metabolic product. The rapid breakdown of starch by O. caudatus indicates

that the protozoa may influence the digestion of the **polysaccharide** in the rumen.

IT 50-21-5P, Lactic acid 64-19-7P, Acetic acid 107-92-6P, Butyric acid 124-38-9P, **Carbon dioxide**
RL: **PREP (Preparation)**
(formation of, in starch metabolism by Ophryoscolex caudatus)

IT 1333-74-0P, Hydrogen
RL: **PREP (Preparation)**
(formation or evolution of, in starch metabolism by Ophryoscolex caudatus)

L3 ANSWER 77 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1960:98901 CAPLUS
DOCUMENT NUMBER: 54:98901
ORIGINAL REFERENCE NO.: 54:18797b-d
TITLE: Some aspects of **carbohydrate** metabolism of cultural forms of Trypanosoma cruzi
AUTHOR(S): Raw, Isaias
CORPORATE SOURCE: Fac. med. univ. Sao Paulo, Brazil
SOURCE: Revista do Instituto de Medicina Tropical de Sao Paulo (**1959**), 1, 192-4
CODEN: RMTSAE; ISSN: 0036-4665
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

TI Some aspects of **carbohydrate** metabolism of cultural forms of Trypanosoma cruzi

SO Revista do Instituto de Medicina Tropical de Sao Paulo (**1959**), 1, 192-4
CODEN: RMTSAE; ISSN: 0036-4665

IT Trypanosoma cruzi
(**carbohydrate** metabolism in)

IT Enzymes
(gluconic acid 6-phosphate-**hydrolyzing**, in Trypanosoma cruzi)

IT **Carbohydrates**
(metabolism of, by Trypanosoma cruzi)

IT 50-21-5P, Lactic acid
RL: **PREP (Preparation)**
(derivs., formation of, in gluconic acid 6-phosphate metabolism by Trypanosoma cruzi)

IT 124-38-9, **Carbon dioxide**
(fixation or metabolism of, by Trypanosoma cruzi)

L3 ANSWER 78 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1957:11033 CAPLUS
DOCUMENT NUMBER: 51:11033
ORIGINAL REFERENCE NO.: 51:2313a-c
TITLE: Structure of the amino **sugar** derived from streptothricin and streptolin B
AUTHOR(S): Van Tamelen, Eugene E.; Dyer, John R.; Carter, Herbert E.; Pierce, Jack V.; Daniels, Edward E.
CORPORATE SOURCE: Univ. of Wisconsin, Madison
SOURCE: Journal of the American Chemical Society (**1956**), 78, 4817-18
CODEN: JACSAT; ISSN: 0002-7863
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

TI Structure of the amino **sugar** derived from streptothricin and

streptolin B
SO Journal of the American Chemical Society (**1956**), 78, 4817-18
CODEN: JACSAT; ISSN: 0002-7863
AB cf. C.A. 48, 5106h. Acid **hydrolysis** of streptothricin and streptolin B yielded, among other products, CO_2, NH_2, L-β-lysine, streptolidine, and a strongly reducing substance (I) HCl. . . .
IT **Sugars**
(amino, of streptolin B and streptothricin)
IT Gulopyranose, 2-amino-1,6-anhydro-2-deoxy-, hydrochloride
RL: **PREP (Preparation)**
(formation from 2-amino-2-deoxy-α-D-gulose)
IT 1404-71-3, Streptolin B 54003-27-9, Streptothricin
(amino **sugar** of)
IT 112599-89-0P, Gulopyranose, 2-amino-1,6-anhydro-2-deoxy-, β-D-
RL: **PREP (Preparation)**
(formation from 2-amino-2-deoxy-α-D-gulose)
IT 504-21-2P, Hexanoic acid, 3,6-diamino-, L- 29307-61-7P, Streptolidine
RL: **PREP (Preparation)**
(formation from **hydrolysis** of streptolin B and streptothricin)
IT 72904-60-0P, Gulose, 2-amino-2-deoxy-, D-
RL: **PREP (Preparation)**
(formation from **hydrolysis** of streptolin B and streptothricin, and hydrochloride)
IT 124-38-9P, **Carbon dioxide** 7664-41-7P, Ammonia
RL: **PREP (Preparation)**
(formation of, from **hydrolysis** of streptolin B and streptothricin)
IT 280-16-0, 6,8-Dioxabicyclo[3.2.1]octane
(**sugar** derivs.)

ACCESSION NUMBER: 1956:82966 CAPLUS
DOCUMENT NUMBER: 50:82966
ORIGINAL REFERENCE NO.: 50:15720d-f
TITLE: The effect of **carbon dioxide** on **polysaccharide** production by Streptococcus bovis
AUTHOR(S): Dain, Joel A.; Neal, A. L.; Seeley, H. W.
CORPORATE SOURCE: Cornell Univ., Ithaca, NY
SOURCE: Journal of Bacteriology (**1956**), 72, 209-13
CODEN: JOBAAY; ISSN: 0021-9193
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
TI The effect of **carbon dioxide** on **polysaccharide** production by Streptococcus bovis
SO Journal of Bacteriology (**1956**), 72, 209-13
CODEN: JOBAAY; ISSN: 0021-9193
AB . . . medium and incubation of the plates anaerobically. The CO_2-dependent slime from 1 strain was purified and identified as a glucose-containing **polysaccharide** by paper chromatography of the **hydrolyzate.** Slime formation may be concerned with the development of bloat in ruminants.
IT **Polysaccharides**
(formation of, by Streptococcus bovis, CO_2 effect on)
IT Streptococcus bovis
(slime **polysaccharide** formation by, CO_2 effect on)

IT 124-38-9P, **Carbon dioxide**
RL: **PREP (Preparation)**
(effect on **polysaccharide** formation by Streptococcus bovis)

L3 ANSWER 80 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1955:40578 CAPLUS
DOCUMENT NUMBER: 49:40578
ORIGINAL REFERENCE NO.: 49:7759e-i
TITLE: Carbohydrases of insects. I. Distribution of carbohydrases in several insects
AUTHOR(S): Koike, Hisayoshi
SOURCE: Dobutsugaku Zasshi (**1954**), 63, 228-34
CODEN: DOZAAK; ISSN: 0044-5118
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
SO Dobutsugaku Zasshi (**1954**), 63, 228-34
CODEN: DOZAAK; ISSN: 0044-5118
AB The carbohydrases of several insects were investigated by detecting the reducing **sugars** produced from di-, tri-, or **polysaccharides** with paper chromatography. In adzuki bean weevil pupae, Callosobruchus chinensis, α-glucosidase, β-fructosidase (I), and α-galactosidase were strongly evident and β-glucosidase. . .
IT Narcosis
(**carbon dioxide**-induced, electrolytes in blood in mental disease after)
IT 585-99-9P, Melibiose
RL: **PREP (Preparation)**
(formation of, from raffinose in insects)
IT 512-69-6, Raffinose
(**hydrolysis** of, by enzymes in insects)

L3 ANSWER 81 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1955:36538 CAPLUS
DOCUMENT NUMBER: 49:36538
ORIGINAL REFERENCE NO.: 49:7067d-h
TITLE: Use of radiosugars in the study of **carbohydrate** metabolism of the leaf
AUTHOR(S): Porter, Helen K.; May, L. H.
CORPORATE SOURCE: Imperial Coll. Sci., London
SOURCE: Proc. 2nd Radioisotope Conf., Oxford, I, Med. and Physiol. Applications (**1954**) 351-9
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
TI Use of radiosugars in the study of **carbohydrate** metabolism of the leaf
SO Proc. 2nd Radioisotope Conf., Oxford, I, Med. and Physiol. Applications (**1954**) 351-9
AB . . . and disks 1 cm. in diameter cut from the leaves and placed in Warburg flasks with 1 ml. of 5% **sugar** solns. containing 4 μc. of C14. The **sugars** supplied included uniformly labeled glucose and fructose and sucrose with either the glucose or fructose moiety labeled. The disks were. . . for analysis of disks and external solns. after 0, 8, 16, and 24 hrs. The mean specific activities of the **carbohydrates** isolated from the disks and of the CO2 evolved remained the same throughout. This showed that at least after 8 hrs. a steady state has been established between entry of **sugar** and

redistribution of labeling. The results support the postulation that **sugar** enters the cell through a barrier into a site of metabolic activity and after crossing a second barrier emerges into. . . to be derived from the common hexose pool. When asymmetrically labeled sucrose was fed there was a large accumulation of **sugar**, predominantly hexose, in which no exchange of label between fructose and glucose had occurred; apparently when high concns. of **sugar** are applied some sucrose passes unchanged across the cytoplasm into the vacuole where it becomes partially **hydrolyzed.** Since starch formation from sucrose was much less than that from hexoses, it must be assumed that the rate of. . . of hexose, and that respiratory demands take precedence over starch synthesis, since CO2 output was unaffected by the type of **sugar** fed.

IT Plant cells
(**carbohydrate** metabolism in cytoplasm of)

IT Tobacco
(**carbohydrate** metabolism in leaf disks of, radiosugars in study of)

IT Metabolism, plant
(**carbohydrate**, radiosugars in study of)

IT Hexoses
(**carbon dioxide** and starch formation from, in leaves)

IT **Sugars**
(transfer of, across cell barriers in tobacco leaves)

IT 14762-75-5, Carbon, isotope of mass 14
(as indicator, of **sugar** utilization in leaves)

IT 9005-25-8P, Starch
RL: **PREP (Preparation)**
(formation of, in tobacco leaves)

L3 ANSWER 82 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1955:9867 CAPLUS
DOCUMENT NUMBER: 49:9867
ORIGINAL REFERENCE NO.: 49:2021i,2022a-e
TITLE: The biochemical activity of some microorganisms of pulque
AUTHOR(S): Sanchez-Marroquin, A.
SOURCE: Mem. congr. cient. mex., IV Centenario univ. Mex. (**1953**), 2, 471-84
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

SO Mem. congr. cient. mex., IV Centenario univ. Mex. (**1953**), 2, 471-84

AB . . . which could produce in high concns. of sucrose, a sirup with 2500 centipoises. This sirup has a high concentration of **sugar**, is highly stable, and has a high viscosity which makes it especially well suited for use in the manufacture of. . . of the sucrose by S. carbajali. This yeast is worthy of consideration in industrial fermentations. It can ferment molasses, and **hydrolyzed** rice and corn starches to yield 79.19-89.6% EtOH. It can ferment raffinose but not melibiose. It can fix CO2 after. . .

IT Torulopsis hydromelitis
RL: **PREP (Preparation)**
(in manufacture of dried yeast from pulque)

IT 64-17-5P, Ethyl alcohol 64-19-7P, Acetic acid 124-38-9P, **Carbon dioxide**

RL: **PREP (Preparation)**
(formation of, by micro organisms of pulque)
IT 50-21-5P, Lactic acid
RL: **PREP (Preparation)**
(formation of, by pulque micro organisms)
IT 9004-54-0P, Dextran
RL: **PREP (Preparation)**
(formation of, from aguamiel by Leuconostoc)
IT 69-65-8P, Mannitol
RL: **PREP (Preparation)**
(formation of, from fructose by Leuconostoc)

L3 ANSWER 83 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1955:6633 CAPLUS
DOCUMENT NUMBER: 49:6633
ORIGINAL REFERENCE NO.: 49:1354e-h
TITLE: Working up solutions from the **hydrolysis** of cellulose containing materials rich in pentosans
INVENTOR(S): Moldenhauer, Otto; Lechner, Richard
PATENT ASSIGNEE(S): Phrix-Werke Akt. Ges.
DOCUMENT TYPE: Patent
LANGUAGE: Unavailable
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 824932		19511213	DE 1949-P45430	19490610 <--

TI Working up solutions from the **hydrolysis** of cellulose containing materials rich in pentosans
PI DE 824932 **19511213**

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI DE 824932		19511213	DE 1949-P45430	19490610 <--

AB The solns. are concentrated by evaporation until the amount of reducible **sugar** constituents (I) is 15-40% by weight The hexoses are then converted to alc. by fermentation and the residual solution is. . . fermentation by molds or similar fungi. A concentration of 20-35% (2.5-8% hexose) is particularly suitable for the fermentation process. A pre-**hydrolyzate** (7500 l.) from straw (4% I containing 20% hexoses and 80% pentoses) is neutralized with Na_2CO_3 and then vacuum evaporated. . .
IT Pentosans
(**hydrolysis** products of cellulose materials rich in, treatment of)
IT 58-86-6, Xylose
(from cellulosic-material (pentosan-rich) **hydrolysis** products)
IT 64-17-5, Ethyl alcohol
(from **hydrolysis** products of pentosanrich cellulose materials)
IT 9004-34-6, Cellulose
(**hydrolysis** of, rich in pentosan, treatment of products from)
IT 71-36-3P, Butyl alcohol
RL: **PREP (Preparation)**
(manufacture by fermentation, of **hydrolysis** products of pentosanrich cellulose materials)
IT 67-64-1P, Acetone 98-01-1P, 2-Furaldehyde

RL: **PREP** **(Preparation)**
(manufacture of, from **hydrolysis** products of pentosanrich cellulose materials)

IT 1333-74-0P, Hydrogen
RL: **PREP** **(Preparation)**
(mixts. with CO2, manufacture from **hydrolysis** product of pentosan-rich cellulose material)

IT 124-38-9P, **Carbon** **dioxide**
RL: **PREP** **(Preparation)**
(mixts. with H, manufacture from **hydrolysis** products of pentosan-high cellulose materials)

L3 ANSWER 84 OF 98 CAPLUS

ACCESSION NUMBER: 1954:72630 CAPLUS
DOCUMENT NUMBER: 48:72630
ORIGINAL REFERENCE NO.: 48:12929g-i
TITLE: Photosynthesis by **sugar** cane fed radioactive **carbon** **dioxide**
AUTHOR(S): Hartt, Constance E.; Burr, G. O.
CORPORATE SOURCE: Hawaiian Sugar Planters' Assoc., Honolulu
SOURCE: Proc. Intern. Botan. Congr., Stockholm, 1950 (**1954**), Volume Date 1953, 7, 748
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

TI Photosynthesis by **sugar** cane fed radioactive **carbon** **dioxide**

SO Proc. Intern. Botan. Congr., Stockholm, 1950 (**1954**), Volume Date 1953, 7, 748

AB The chief products of dark fixation of CO2 by the **sugar** cane plant are found in the NH4 oxalate extract, which is comprised chiefly of pectic substances. Other fractions radioactive after exposure in the dark included the alc. extract, the water extract, and lignin. The acid **hydrolyzate** became radioactive after 5 sec. and cellulose after 15 sec. Glucose had the highest specific activity of the 3 **sugars** (glucose, fructose, and sucrose) isolated, and gained in radioactivity before there was any gain in sucrose. At 10 sec., 100% of the gain in **sugars** was due to glucose plus fructose, while at 5 min. 80% of the gain was due to sucrose. Sucrose is a storage product; its formation starts at about the same time as that of the acid-**hydrolyzable** pentosans and cellulose.

IT Photosynthesis
(by **sugar** cane fed radioactive CO2)

IT Pectic substances
(formation in **sugar** cane, photosynthesis in)

IT Pentosans
(in **sugar** cane, photosynthesis and)

IT **Sugar** cane
(photosynthesis in)

IT 14762-75-5, Carbon, isotope of mass 14
(as indicator, of CO2 fixation by **sugar** cane)

IT 124-38-9P, **Carbon** **dioxide**
RL: **PREP** **(Preparation)**
(formation of, from chloroplast in dark)

IT 9004-34-6P, Cellulose 9005-53-2P, Lignin
RL: **PREP** **(Preparation)**
(formation of, in **sugar** cane, photosynthesis in)

IT 50-99-7P, D-Glucose 57-48-7P, Fructose 57-50-1P, Sucrose

RL: **PREP** **(Preparation)**
(in **sugar** cane, photosynthesis and)

L3 ANSWER 85 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1954:61044 CAPLUS
DOCUMENT NUMBER: 48:61044
ORIGINAL REFERENCE NO.: 48:10859b-c
TITLE: Incorporation of carbon14 into various **carbohydrates** of tobacco leaves after different periods of photosynthesis in C14O2
AUTHOR(S): Vittorio, P. V.; Krotkov, G.; Reed, G. B.
CORPORATE SOURCE: Queens Univ., Kingston, ON
SOURCE: Science (Washington, DC, United States) (**1954**), 119, 906-8
CODEN: SCIEAS; ISSN: 0036-8075
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

TI Incorporation of carbon14 into various **carbohydrates** of tobacco leaves after different periods of photosynthesis in C14O2

SO Science (Washington, DC, United States) (**1954**), 119, 906-8
CODEN: SCIEAS; ISSN: 0036-8075

AB cf. C.A. 48, 8341d. In tobacco leaves, C14 from C14O2 appears in a **polysaccharide** before it does in sucrose, glucose, or fructose. It was found that in up to 3 hrs. of photosynthesis the specific activity of the "starch" was consistently higher than the **sugars**, but at the end of 6 hrs. all the specific activities were about equal. In the EtOH exts. the activity. . . in sucrose and later in fructose and glucose. It was suggested that the free glucose and fructose arose by sucrose **hydrolysis.**

IT Tobacco
(**carbon** **dioxide** (C14O2) assimilation by)

IT **Polysaccharides**
(**carbon** **dioxide** (C14O2) incorporation into, in tobacco leaves)

IT Photosynthesis
(**carbon** **dioxide** assimilation in, by tobacco leaf)

IT 14762-75-5, Carbon, isotope of mass 14
(as indicator, of CO2 incorporation into **carbohydrates** in tobacco leaves)

IT 57-48-7, Fructose
(**carbon** **dioxide** (C14O2) incorporation into, in tobacco leaves)

IT 57-50-1P, Sucrose
RL: **PREP** **(Preparation)**
(formation of, from CO2 by tobacco leaves)

IT 50-99-7P, D-Glucose
RL: **PREP** **(Preparation)**
(formation of, from **carbon** **dioxide** in tobacco leaves)

L3 ANSWER 86 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1953:11185 CAPLUS
DOCUMENT NUMBER: 47:11185
ORIGINAL REFERENCE NO.: 47:1996a-d
TITLE: Solid-liquid reaction processes
INVENTOR(S): Stanton, Robert
DOCUMENT TYPE: Patent

LANGUAGE: Unavailable
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2615907		19521028	US 1947-733746	19470311 <--

PI US 2615907 **19521028**

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2615907		19521028	US 1947-733746	19470311 <--

AB . . . . 100°, to produce urea; the reaction between Al2O3, C, and N to prepare AlN and CO (the AlN may be **hydrolyzed** to give NH3 and Al(OH)3); the treatment of coke with steam containing 2% H3PO4 at 1100° to produce active C;. . . Cl at 35-50° to prepare SCl; the reaction of Mg with EtCl to prepare the Grignard reagent; the treatment of **carbohydrates**, such as sawdust, cotton linters, or grain, with mixed acid (HNO3 and H2SO4) to prepare oxalic acid; the treatment of milo maize with dilute aqueous HCl to give invert **sugar**; the reaction of CaC2 with H2O vapor containing an acid, such as HCl or HOAc, to give the vinyl ester. . .

IT Sorghum
(invert-**sugar** manufacture from)

IT **Carbohydrates**
Grains
Linters
Sawdust
(oxalic acid manufacture from)

IT 8013-17-0, **Sugar**, invert
(from milo maize)

IT 12740-44-2P, Sodium alloys, lead-
RL: **PREP (Preparation)**
(in PbEt4 manufacture)

IT 12740-44-2P, Lead alloys, sodium-
RL: **PREP (Preparation)**
(in manufacture of PbEt4)

IT 75-00-3P, Ethane, chloro-
RL: **PREP (Preparation)**
(in tetraethyllead manufacture)

IT 13693-11-3P, Titanium sulfate, Ti(SO4)2
RL: **PREP (Preparation)**
(manufacture from ilmenite or rutile)

IT 78-00-2P, Lead, tetraethyl- 144-62-7P, Oxalic acid 10025-67-9P, Sulfur chloride, S2Cl2
RL: **PREP (Preparation)**
(manufacture of)

IT 24304-00-5P, Aluminum nitride
RL: **PREP (Preparation)**
(manufacture of, and manufacture of NH3 and Al(OH)3 from)

IT 156-62-7P, Calcium cyanamide
RL: **PREP (Preparation)**
(manufacture of, and urea manufacture from)

IT 7664-38-2P, Phosphoric acid
RL: **PREP (Preparation)**
(manufacture of, and use in activated-C manufacture)

IT 21645-51-2P, Aluminum hydroxide
RL: **PREP (Preparation)**

(manufacture of, from AlN)
IT 630-08-0P, Carbon monoxide
RL: **PREP** **(Preparation)**
(manufacture of, from Al2O3, C and N)
IT 54-21-7P, Sodium salicylate
RL: **PREP** **(Preparation)**
(manufacture of, from CO2 and Na phenoxide)
IT 57-13-6P, Urea
RL: **PREP** **(Preparation)**
(manufacture of, from CaCN2)
IT 124-38-9, **Carbon** **dioxide**
(reactions of, with Na phenoxide)
IT 1317-80-2P, Rutile 12168-52-4P, Ilmenite
RL: **PREP** **(Preparation)**
(titanium sulfate manufacture from)

L3 ANSWER 87 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1953:11184 CAPLUS
DOCUMENT NUMBER: 47:11184
ORIGINAL REFERENCE NO.: 47:1996a-d
TITLE: Solid-liquid reaction processes
INVENTOR(S): Stanton, Robert
DOCUMENT TYPE: Patent
LANGUAGE: Unavailable
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2615906		19521028	US 1948-28613	19480522 <--

PI US 2615906 **19521028**

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2615906		19521028	US 1948-28613	19480522 <--

AB . . . 100°, to produce urea; the reaction between Al2O3, C, and N to prepare AlN and CO (the AlN may be **hydrolyzed** to give NH3 and Al(OH)3); the treatment of coke with steam containing 2% H3PO4 at 1100° to produce active C;. . . Cl at 35-50° to prepare SCl; the reaction of Mg with EtCl to prepare the Grignard reagent; the treatment of **carbohydrates**, such as sawdust, cotton linters, or grain, with mixed acid (HNO3 and H2SO4) to prepare oxalic acid; the treatment of milo maize with dilute aqueous HCl to give invert **sugar**; the reaction of CaC2 with H2O vapor containing an acid, such as HCl or HOAc, to give the vinyl ester. . .
IT Sorghum
(invert-**sugar** manufacture from)
IT **Carbohydrates**
Grains
Linters
Sawdust
(oxalic acid manufacture from)
IT 8013-17-0, **Sugar,** invert
(from milo maize)
IT 12740-44-2P, Sodium alloys, lead-
RL: **PREP** **(Preparation)**
(in PbEt4 manufacture)
IT 12740-44-2P, Lead alloys, sodium-

RL: **PREP (Preparation)**
(in manufacture of PbEt4)
IT 75-00-3P, Ethane, chloro-
RL: **PREP (Preparation)**
(in tetraethyllead manufacture)
IT 13693-11-3P, Titanium sulfate, Ti(SO4)2
RL: **PREP (Preparation)**
(manufacture from ilmenite or rutile)
IT 78-00-2P, Lead, tetraethyl- 144-62-7P, Oxalic acid 10025-67-9P, Sulfur chloride, S2Cl2
RL: **PREP (Preparation)**
(manufacture of)
IT 24304-00-5P, Aluminum nitride
RL: **PREP (Preparation)**
(manufacture of, and manufacture of NH3 and Al(OH)3 from)
IT 156-62-7P, Calcium cyanamide
RL: **PREP (Preparation)**
(manufacture of, and urea manufacture from)
IT 7664-38-2P, Phosphoric acid
RL: **PREP (Preparation)**
(manufacture of, and use in activated-C manufacture)
IT 21645-51-2P, Aluminum hydroxide
RL: **PREP (Preparation)**
(manufacture of, from AlN)
IT 630-08-0P, Carbon monoxide
RL: **PREP (Preparation)**
(manufacture of, from Al2O3, C and N)
IT 54-21-7P, Sodium salicylate
RL: **PREP (Preparation)**
(manufacture of, from CO2 and Na phenoxide)
IT 57-13-6P, Urea
RL: **PREP (Preparation)**
(manufacture of, from CaCN2)
IT 124-38-9, **Carbon dioxide**
(reactions of, with Na phenoxide)
IT 1317-80-2P, Rutile 12168-52-4P, Ilmenite
RL: **PREP (Preparation)**
(titanium sulfate manufacture from)

ACCESSION NUMBER: 1953:3877 CAPLUS
DOCUMENT NUMBER: 47:3877
ORIGINAL REFERENCE NO.: 47:688h-i
TITLE: Utilization of **carbon dioxide** in the synthesis of proteins by Escherichia coli. I
AUTHOR(S): Abelson, Philip H.; Bolton, Ellis T.; Aldous, Elaine
CORPORATE SOURCE: Carnegie Inst. of Washington, Washington, DC
SOURCE: Journal of Biological Chemistry (**1952**), 198, 165-72
CODEN: JBCHA3; ISSN: 0021-9258
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
TI Utilization of **carbon dioxide** in the synthesis of proteins by Escherichia coli. I
SO Journal of Biological Chemistry (**1952**), 198, 165-72
CODEN: JBCHA3; ISSN: 0021-9258
AB E. coli grown in the presence of glucose as an energy source oxidizes

about half the **sugar** to CO2, directly utilizing the remainder as a C source. E. coli incorporates exogenous CO2 during synthesis. For each mole of glucose metabolized, 0.21 mole of C14O2 is fixed, principally in nucleic acids and proteins. Examination of protein **hydrolyzates** showed that aspartic and gintamic acids, arginine, lysine, proline, and threonine contained C14 and accounted for virtually all the C14. . . .

IT 14762-75-5P, Carbon, isotope of mass 14
RL: **PREP** **(Preparation)**
(as indicator, of CO2 assimilation in protein synthesis by Escherichia coli)

IT 124-38-9P, **Carbon** **dioxide**
RL: **PREP** **(Preparation)**
(protein formation from, by Escherichia coli)

L3 ANSWER 89 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1952:70591 CAPLUS
DOCUMENT NUMBER: 46:70591
ORIGINAL REFERENCE NO.: 46:11730f-g
TITLE: Quantitative paper chromatography of D-glucose and its oligosaccharides
AUTHOR(S): Dimler, R. J.; Schaefer, W. C.; Wise, C. S.; Rist, C. E.
CORPORATE SOURCE: Northern Regional Research Lab., Peoria, IL
SOURCE: Anal. Chem. (**1952**), 24, 1411-14
CODEN: ANCHAM; ISSN: 0003-2700
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

SO Anal. Chem. (**1952**), 24, 1411-14
CODEN: ANCHAM; ISSN: 0003-2700

AB The apparatus previously described (C.A. 45, 5072e) has been used to sep. the products of starch **hydrolysis**; BuOH:pyridine:H2O, 6:4:3 by volume, or fusel oil (b. 121-9°):pyridine:H2O, 1:1:1 are employed as solvents. Guide strips were sprayed to locate the band for each **sugar**, and the band was cut out and eluted by the method of Dent (C.A. 42, 663d). The eluted **carbohydrate** was determined with anthrone, giving results within 5% of the true value for known amts. of the compound

IT **Sugars**
(analysis, determination of glucose and oligosaccharides)

IT 124-38-9P, **Carbon** **dioxide** 630-08-0P, Carbon monoxide
RL: **PREP** **(Preparation)**
(formation of, from **carbohydrates** by caramel decomposition)

L3 ANSWER 90 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1949:27708 CAPLUS
DOCUMENT NUMBER: 43:27708
ORIGINAL REFERENCE NO.: 43:5099h-i,5100a-b
TITLE: Incorporation of acetate and butyrate carbon into rat liver glycogen by pathways other than **carbon** **dioxide** fixation
AUTHOR(S): Lifson, Nathan; Lorber, Victor; Sakami, Warwick; Wood, Harland G.
SOURCE: Journal of Biological Chemistry (**1948**), 176, 1263-84
CODEN: JBCHA3; ISSN: 0021-9258
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

TI Incorporation of acetate and butyrate carbon into rat liver glycogen by pathways other than **carbon dioxide** fixation
SO Journal of Biological Chemistry (**1948**), 176, 1263-84
CODEN: JBCHA3; ISSN: 0021-9258
AB . . . glucose plus either acetate or butyrate labeled with C13. The glycogen of the livers was isolated, following the feeding, and **hydrolyzed** to glucose, and the glucose degraded. After administration of CH3C13OOH, CH3CH2CH2C13OOH, or CH3C13H2CH2COOH, all of the excess C13 in the. . . butyrate can enter glycogen by a pathway other than CO2 fixation. These results are consistent with the formation of 3-C **carbohydrate** fragments from acetate and butyrate via the tricarboxylic acid cycle, and synthesis of the 6-C glycogen units from two 3-C. . .
IT 64-19-7P, Acetic acid
RL: **PREP** **(Preparation)**
(derivs., protein formation from, in liver)
IT 9005-79-2P, Glycogen
RL: **PREP** **(Preparation)**
(formation of, from acetate and butyrate in liver)
IT 107-92-6P, Butyric acid
RL: **PREP** **(Preparation)**
(glycogen (liver) formation from)
IT 14762-74-4P, Carbon, isotope of mass 13
RL: **PREP** **(Preparation)**
(in glycogen formation from acetate and butyrate in liver)

L3 ANSWER 91 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1940:257 CAPLUS
DOCUMENT NUMBER: 34:257
ORIGINAL REFERENCE NO.: 34:30a-b
TITLE: The photosynthesis of **carbohydrates** from hydrated CO2
AUTHOR(S): Baly, E. C. C.
SOURCE: Chemical Products and Chemical News (**1939**), 2, 117-19
CODEN: CPCNA8; ISSN: 0366-7790
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
TI The photosynthesis of **carbohydrates** from hydrated CO2
SO Chemical Products and Chemical News (**1939**), 2, 117-19
CODEN: CPCNA8; ISSN: 0366-7790
AB . . . of hydrated CO2 an organic compound is photosynthesized. The first product of the synthesis, which gives the Molisch reaction after **hydrolysis**, is unstable and changes slowly at room temperature and rapidly at 60° to a stable compound This colorless stable compound can be **hydrolyzed** by taka-diastase to a reducing **sugar** and is probably therefore a type of starch.
IT 124-38-9P, **Carbon** **dioxide**
RL: **PREP** **(Preparation)**
(mixts. with water, photosynthesis of **carbohydrates** from)

L3 ANSWER 92 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1940:256 CAPLUS
DOCUMENT NUMBER: 34:256
ORIGINAL REFERENCE NO.: 34:30a-b
TITLE: The photosynthesis of **carbohydrates** from hydrated CO2

AUTHOR(S): Baly, E. C. C.
SOURCE: Proc. Roy. Soc. (London) (**1939**), A172, 445-65
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
TI The photosynthesis of **carbohydrates** from hydrated CO2
SO Proc. Roy. Soc. (London) (**1939**), A172, 445-65
AB . . . of hydrated CO2 an organic compound is photosynthesized. The first product of the synthesis, which gives the Molisch reaction after **hydrolysis**, is unstable and changes slowly at room temperature and rapidly at 60° to a stable compound This colorless stable compound can be **hydrolyzed** by taka-diastase to a reducing **sugar** and is probably therefore a type of starch.
IT 124-38-9P, **Carbon dioxide**
RL: **PREP (Preparation)**
(mixts. with water, photosynthesis of **carbohydrates** from)

L3 ANSWER 93 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1937:53653 CAPLUS
DOCUMENT NUMBER: 31:53653
ORIGINAL REFERENCE NO.: 31:7464b-d
TITLE: The carbon metabolism of the crown-gall and hairy-root organisms
AUTHOR(S): Conner, H. A.; Riker, A. J.; Peterson, W. H.
SOURCE: Journal of Bacteriology (**1936**), 34, 221-36
CODEN: JOBAAY; ISSN: 0021-9193
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
SO Journal of Bacteriology (**1936**), 34, 221-36
CODEN: JOBAAY; ISSN: 0021-9193
AB . . . cells and gum from cultures of II and approx. 30% from cultures of I. From 70 to 80% of the **sugar** fermented goes to form other products some of which were isolated and partly characterized. These metabolites differ from the bacterial gum in that they do not yield reducing **sugars** on **hydrolysis.** The bacterial gum consists chiefly of glucose units (72-98%) with small amts. of uronic acid (5%). Qual. tests for other. . . .
IT 64-19-7P, Acetic acid 127-17-3P, Pyruvic acid
RL: **PREP (Preparation)**
(formation of, by crown gall and hairy root organisms)
IT 124-38-9P, **Carbon dioxide**
RL: **PREP (Preparation)**
(formation of, by crown gall and hairy-root organisms)

L3 ANSWER 94 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1933:27478 CAPLUS
DOCUMENT NUMBER: 27:27478
ORIGINAL REFERENCE NO.: 27:2503f-h
TITLE: Effect of **carbon dioxide** content of storage atmosphere on **carbohydrate** transformation in certain fruits and vegetables
AUTHOR(S): Miller, Erston V.; Brooks, Charles
SOURCE: Journal of Agricultural Research (Washington, D. C.) (**1932**), 45, 449-59
CODEN: JAGRAC; ISSN: 0095-9758
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

TI Effect of **carbon dioxide** content of storage atmosphere on **carbohydrate** transformation in certain fruits and vegetables
SO Journal of Agricultural Research (Washington, D. C.) (**1932**), 45, 449-59
CODEN: JAGRAC; ISSN: 0095-9758
AB . . . with CO2 gas at different temps. (0-25° in steps of 5°) for periods of 1-6 days and subsequently analyzed for **sugars** and acid-**hydrolyzable polysaccharides.** Treatment at the higher temps. was usually for 1-3 days and that at lower temps. was usually for 2-6 days. No significant difference in percentage of reducing **sugar**, total **sugar**, or acid-**hydrolyzable polysaccharides** was observed when sour cherries, sweet cherries and Belle peaches were treated with CO2 in concns. of 35-47%. Similar concns. of CO2 retard the rate of **sugar** loss in peas and sweet corn. Peaches, corn and peas withstand treatments with 35-47% CO2 at 5° for 4-5 days. . .
IT Corn
(**carbohydrate** transformation in sweet, effect of CO2 content of storage atmospheric on)
IT Cherries
Peach
Peas
(**carbohydrate** transformation in, effect of CO2 content of storage atmospheric on)
IT **Carbohydrates**
(transformation of, in fruits and vegetables, effect of CO2 content of storage atmospheric on)
IT 124-38-9P, **Carbon dioxide**
RL: **PREP (Preparation)**
(in storage atmospheric, effect on **carbohydrate** transformation in fruits and vegetables)

L3 ANSWER 95 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1931:43349 CAPLUS
DOCUMENT NUMBER: 25:43349
ORIGINAL REFERENCE NO.: 25:4912f-h
TITLE: Studies on the hemicelluloses. I. The evolution of **carbon dioxide** by plant materials and some hemicelluloses under the action of boiling twelve percent hydrochloric acid
AUTHOR(S): Anderson, Ernst
SOURCE: Journal of Biological Chemistry (**1931**), 91, 559-68
CODEN: JBCHA3; ISSN: 0021-9258
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
TI Studies on the hemicelluloses. I. The evolution of **carbon dioxide** by plant materials and some hemicelluloses under the action of boiling twelve percent hydrochloric acid
SO Journal of Biological Chemistry (**1931**), 91, 559-68
CODEN: JBCHA3; ISSN: 0021-9258
AB . . . material examined gave evidence of the presence of uronic acid except ivory nuts, in which the hemicellulose is a true **polysaccharide.** Some plant materials such as white-birch sawdust and corn-cobs contain 2 or more hemicelluloses, which may be isolated by varying the method of extraction, and others like cottonseed hulls contain but 1. Partial **hydrolysis** of some of the isolated hemicelluloses

yielded reducing **sugars** together with aldobionic acids similar to those isolated from some of the plant gums so that it thus appears that. . .

IT Plants
(**carbon** **dioxide** evolution from materials of)

IT 9034-32-6P, Hemicelluloses
RL: **PREP** **(Preparation)**
(**carbon** **dioxide** evolution from)

IT 124-38-9P, **Carbon** **dioxide**
RL: **PREP** **(Preparation)**
(evolution of, from plant materials and some hemicelluloses)

L3 ANSWER 96 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1929:6151 CAPLUS
DOCUMENT NUMBER: 23:6151
ORIGINAL REFERENCE NO.: 23:728a-b
TITLE: The solubility of **carbon** **dioxide** in **sugar** solutions and its combination with amino acids
AUTHOR(S): Majer, Vladimir
SOURCE: Listy Cukrovarnicke (**1928**), 47, 123-36
CODEN: LICUAB; ISSN: 0024-4449
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

TI The solubility of **carbon** **dioxide** in **sugar** solutions and its combination with amino acids

SO Listy Cukrovarnicke (**1928**), 47, 123-36
CODEN: LICUAB; ISSN: 0024-4449

AB . . . forms as carbamides. The absorption of CO_2 at 80° was lowered in the presence of aspartic and glutamic acids and **hydrolytic** products of sucrose and pectin. The amount of CO_2 in phys. solution and that bound by amino groups are lower. . .

IT 57-50-1, Sucrose
(**carbon** **dioxide** solubility in solns. of)

IT 54399-65-4P, Aspartic acid, N-carboxy- 89497-16-5P, Glutamic acid, N-carboxy-
RL: **PREP** **(Preparation)**
(formation in **sugar** solns.)

IT 124-38-9, **Carbon** **dioxide**
(solubility of, in **sugar** solns. and its combination with amino acids)

L3. ANSWER 97 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1923:1698 CAPLUS
DOCUMENT NUMBER: 17:1698
ORIGINAL REFERENCE NO.: 17:324a-c
TITLE: Fatty acids; carbonic acid; hydrogen
PATENT ASSIGNEE(S): Lefranc Et Cie
DOCUMENT TYPE: Patent
LANGUAGE: Unavailable
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 186572		19230502	GB 1922-3136	19220202 <--

PI GB 186572 **19220202**

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	GB 186572		19230502	GB 1922-3136	19220202 <--

AB Waste cellulosic materials such as wood waste are **hydrolyzed** to impure sugary worts, which, after purification, are subjected to symbiotic bacterial fermentation to produce fatty acids, mainly butyric acid. The **hydrolysis** of the disintegrated wood waste is effected by means of dilute H2SO4 and superheated steam; the acid liquors are then neutralized with lime or chalk; the **sugar** solution is extracted from the product by exhaustion, and purified from gums, resins, mucilages, etc., by adding excess of milk. . . . of the decanted solution through animal charcoal. The purified wood wort is then treated with the ferments obtained by inoculating **sugar** solns. containing mineral salts with bacilli of the intestinal digestion of herbivora or contained in garden earth; by this means, all the reducible **sugars** of the wood wort are converted into acids, viz., butyric, acetic, propionic, valeric, and caproic acids. The fermented wort is. . .

IT 107-92-6P, Butyric acid 1333-74-0P, Hydrogen
RL: **PREP** **(Preparation)**
(manufacture of, by fermentation)

IT 124-38-9P, **Carbon** **dioxide**
RL: **PREP** **(Preparation)**
(recovery of, in fermentation)

L3 ANSWER 98 OF 98 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1907:3543 CAPLUS
DOCUMENT NUMBER: 1:3543
ORIGINAL REFERENCE NO.: 1:873i,874a-h
TITLE: The Synthesis of Protein through the Action of Trypsin
AUTHOR(S): Taylor, Alonzo Englebert
CORPORATE SOURCE: Lab. of Pathol., Univ. California
SOURCE: Pr. Soc. Exp. Biol. Med., New York City, Feb., 1907 (**1907**)
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

SO Pr. Soc. Exp. Biol. Med., New York City, Feb., 1907 (**1907**)

AB Of the three large groups of organic substances concerned in the living plant or body, **carbohydrates**, fats and proteins, successful catalytic reversions have been accomplished in only the first two. Of **carbohydrates** the following have been synthesized by ferment action: starch, glycogen, cane **sugar**, maltose, lactose and glucosides. Fats of both the mon-atomic alcohols and of glycerol have been synthesized by ferment' action. A. . . . has been obtained. Four hundred g. of the protaminic sulphate of the striped bass were digested with trypsin until the **hydrolysis** of the substrate was completed. At the close of the digestion, the solution was miscible with five volumes of acidulated. . . . boiling point, freed of its sulphuric acid by the addition of barium, the excess of barium removed by saturation with **carbon** **dioxide**, filtered hot and the filtrations repeated until the fluid was clear. This solution then represented a solution of amino acids, free and combined with **carbon** **dioxide**, the products of the **hydrolysis** of the protamine. The solution was clear, and had an alkaline reaction. This solution was then concentrated until beginning precipitation. . . .

IT 9002-07-7P, Trypsin
RL: **PREP** **(Preparation)**
(protein synthesis by)

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L2          135 S L1 AND PREP/RL
L3           98 S L2 AND PY<=2003

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